

<b>Distillation, synthesis</b>	<b>570</b>
Flasks with NS joint neck .....	570
Components for reaction and distillation.....	578
Flat ground flange reaction vessels.....	587
KPG stirrer and bearings .....	590
Dropping Funnels.....	591
Reflux condenser .....	592
Distillation-Accessories .....	595
Components for Extraction .....	597
Gas wash bottles .....	602
Tubing adapters.....	604
Standard ground stoppers.....	608
NS joints accessories.....	609
Ground joints, attachable.....	612
Stopcocks and Valves .....	613
<b>Rotary evaporators</b>	<b>615</b>
Instruments .....	615
Accessories .....	623
<b>Separating, centrifuging</b>	<b>625</b>
Minicentrifuges .....	625
Benchtop centrifuges.....	631
Centrifuge tubes.....	644
<b>Filtration</b>	<b>652</b>
Filter paper, qualitative .....	652
Filter paper, quantitative .....	659
Glass-fibre filters .....	662
Membrane filters.....	665
Syringe filters.....	670
In-Line filter.....	683
Filtration apparatus .....	685

## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

GENERAL CATALOGUE EDITION 19



6.237 702

#### Round bottom flasks, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12394. Reinforced rims are used to prevent breaking during washing and transportation.

Isolab

Capacity	Socket	Flask diam.	Height	Neck diam. approx.	PK	Cat. No.
ml	NS	mm	mm	mm		
50	14/23	51	105	22	1	6.236 508
50	19/26	51	100	22	1	4.008 379
50	24/29	51	100	30	1	4.008 380
50	29/32	51	105	34	1	6.238 345
100	14/23	64	115	22	1	6.236 346
100	19/26	64	110	22	1	4.008 381
100	24/29	64	110	30	1	4.008 382
100	29/32	64	115	34	1	6.236 774
250	19/26	85	140	22	1	4.008 383
250	24/29	85	140	30	1	4.008 384
250	29/32	85	145	34	1	6.236 303
500	24/29	105	170	30	1	4.008 385
500	29/32	105	175	34	1	6.240 426
1000	24/29	131	210	42	1	6.237 702 1
1000	29/32	131	200	42	1	6.242 240
2000	29/32	166	260	34	1	6.238 472



9.011 850

#### Round bottom flasks with conical ground joint, DURAN®

According to DIN EN ISO 4797 and in addition to standard (\*), with inscription label, material: DURAN®.

Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
5	14/23*	30	1	6.201 199
10	14/23*	35	1	9.011 801
25	14/23	41	1	9.011 802
25	19/26	41	1	7.021 797
50	14/23	51	1	9.011 805
50	19/26	51	1	6.302 116
50	24/29	51	1	7.019 181
50	29/32	51	1	9.011 835
100	14/23	64	1	9.011 810
100	19/26	64	1	6.200 675
100	24/29	64	1	7.019 182
100	29/32	64	1	9.011 840
250	14/23*	85	1	9.011 815
250	19/26*	85	1	6.800 202
250	24/29	85	1	6.800 214
250	29/32	85	1	9.011 845
250	45/40*	85	1	9.011 867
500	24/29	105	1	6.800 215
500	29/32	105	1	9.011 850 2
500	45/40	105	1	9.011 868
1000	24/29	131	1	6.800 235
1000	29/32	131	1	9.011 855
1000	45/40	131	1	9.011 869
2000	29/32	166	1	9.011 860
2000	45/40	166	1	9.011 870
3000	29/32*	185	1	6.077 738
3000	45/40*	185	1	6.901 617
4000	29/32	207	1	9.011 865
4000	45/40	207	1	9.011 875
5000	29/32*	223	1	9.011 864
5000	45/40	223	1	9.011 877
6000	29/32*	236	1	9.011 866
6000	45/40	236	1	9.011 880
10000	45/40	279	1	9.011 885



## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

#### Round bottom flasks, borosilicate glass 3.3, amber

Manufactured from borosilicate glass 3.3., amber. Resistant to heat and almost all chemicals. According to DIN 12394. Reinforced rims are used to prevent breaking during washing and transportation.

Isolab

Capacity	Socket	Flask diam.	Height	PK	Cat. No.
ml	NS	mm	mm		
50	29/32	51	105	1	9.141 091
100	29/32	64	115	1	7.980 357
250	29/32	85	145	1	7.980 358
500	29/32	105	175	1	9.141 092 <b>1</b>
1000	29/32	131	200	1	9.141 093

1



9.141 092

#### Round bottom flasks with conical ground joint, amber, DURAN®

According to DIN EN ISO 4797, with inscription label, material: DURAN®.

Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
50	29/32	51	1	6.242 163
100	29/32	64	1	9.011 827
250	29/32	85	1	9.011 828
500	29/32	105	1	9.011 829 <b>2</b>
2000	29/32	166	1	6.253 256

2



9.011 829

#### Kjeldahl flasks with ground neck

Manufactured from borosilicate glass 3.3. NS necks are in compliance with DIN 12242 standards.

Isolab

Capacity	Socket	PK	Cat. No.
ml	NS		
100	19/26	1	9.140 385
250	29/32	1	9.140 386
500	29/32	1	9.140 387 <b>3</b>
750	29/32	1	9.140 388
1000	29/32	1	9.140 389

3



9.140 387

#### Kjeldahl Flasks, DURAN®

For the determination of nitrogen in organic compounds. With centre neck and conical joint.

Lenz

Capacity	NS	Flask diam.	PK	Cat. No.
ml		mm		
50	19/26	51	1	9.141 860
100	19/26	60	1	9.141 861
250	29/32	81	1	6.073 310 <b>4</b>
500	29/32	101	1	6.057 941
750	29/32	115	1	6.233 275
1000	29/32	126	1	7.608 178

4



6.073 310

## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck



#### 1 Pear shape flasks, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Conformed to DIN 12383 standards.  
NS neck is in compliance with DIN 12242 standards.

Isolab

Capacity	Socket	PK	Cat. No.
ml	NS		
10	14/23	1	6.236 347
25	14/23	1	6.237 164
50	14/23	1	6.237 165
100	14/23	1	6.237 166
250	14/23	1	9.140 302
25	19/26	1	9.140 303
50	19/26	1	9.140 304
100	19/26	1	9.140 305
250	19/26	1	9.140 306
50	24/29	1	9.140 307
100	24/29	1	9.140 308
250	24/29	1	9.140 309
50	29/32	1	9.140 310
100	29/32	1	6.257 941
250	29/32	1	9.140 311



#### 2 Pear shape flasks with conical ground joints, DURAN®

In addition to DIN standard, with inscription label, material: DURAN®

Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
10	14/23	33	1	9.012 021
25	14/23	42	1	9.012 022
50	14/23	51	1	9.012 023
100	14/23	64	1	9.012 024



#### 3 Pear shape flasks with side neck, borosilicate glass 3.3



Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals.  
They meet the highest quality standards according to DIN 12383 standards.

Isolab

NS necks are in compliance with DIN 12242 standards and side neck has an angle of 25° with the center neck.

Capacity	Socket	Side necks	PK	Cat. No.
ml	NS	NS		
25	14/23	14/23	1	9.140 312
50	14/23	14/23	1	9.140 313
100	14/23	14/23	1	9.140 314
250	14/23	14/23	1	9.140 315
25	19/26	14/23	1	9.140 316
50	19/26	14/23	1	9.140 317
100	19/26	14/23	1	9.140 318
250	19/26	14/23	1	9.140 319



## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

#### Round bottom flasks with two necks, angled arm, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Conformed to DIN 12394. The side arms are 45 degree angled with each other. NS necks are in compliance with DIN 12242 standards. Two-necked round-bottomed flask available with parallel side arm on request.

Isolab

Capacity	Centre neck	Angled side necks	PK	Cat. No.
ml	NS	NS		
50	14/23	14/23	1	9.140 320
100	14/23	14/23	1	9.140 321
250	14/23	14/23	1	9.140 322
100	24/29	14/23	1	9.140 323
250	24/29	14/23	1	9.140 324
500	24/29	14/23	1	9.140 325
1000	24/29	19/26	1	9.140 326
100	24/29	19/26	1	9.140 327
250	24/29	19/26	1	9.140 328
500	24/29	19/26	1	9.140 329
100	29/32	14/23	1	6.243 616
1000	24/29	14/23	1	9.140 330
250	29/32	14/23	1	4.008 386
500	29/32	14/23	1	4.008 387
1000	29/32	14/23	1	4.008 388 1
2000	29/32	14/23	1	9.140 331
100	29/32	19/26	1	9.140 332
250	29/32	19/26	1	9.140 333
500	29/32	19/26	1	9.140 334
1000	29/32	19/26	1	9.140 335
2000	29/32	19/26	1	9.140 336
100	29/32	29/32	1	9.140 337
250	29/32	29/32	1	6.243 617
500	29/32	29/32	1	6.243 618
1000	29/32	29/32	1	6.243 619
2000	29/32	29/32	1	6.243 620
6000	29/32	29/32	1	9.140 339



4.008 388

#### Round bottom flasks with two necks, side neck angled, DURAN®

DIN 12394 and in addition to standard (\*). With one central and one 20° side angled ground joint necks as outlined below.

Lenz

Capacity	Centre neck	Side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
25	14/23	14/23*	41	1	9.011 901
50	14/23	14/23*	51	1	9.011 902
100	14/23	14/23*	64	1	9.011 903
100	29/32	14/23*	64	1	9.011 904
100	29/32	19/26*	64	1	6.233 114
100	29/32	29/32*	64	1	6.204 819
250	14/23	14/23*	85	1	9.011 905
250	24/29	19/26*	85	1	6.206 139
250	29/32	14/23	85	1	9.011 906
250	29/32	19/26	85	1	6.225 989
250	29/32	29/32*	85	1	9.011 907
500	29/32	14/23	105	1	9.011 908 2
500	29/32	19/26	105	1	6.233 091
500	29/32	29/32*	105	1	9.011 910
1000	29/32	14/23	131	1	9.011 915
1000	29/32	19/26	131	1	6.231 953
1000	29/32	29/32*	131	1	9.011 920
2000	29/32	14/23	166	1	6.072 288
2000	29/32	29/32*	166	1	6.056 856
4000	29/32	29/32*	207	1	6.201 298



9.011 908

#### Round bottom flasks with two necks, with parallel neck available on request

## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

GENERAL CATALOGUE EDITION 19



6.243 662

#### Round bottom flasks with three necks, NS joints, parallel arms, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Conformed to DIN 12394. The flasks have thick walls, heavy bases and reinforced rims which prevent breaking. The side arms are parallel to the centre neck. NS necks are in compliance with DIN 12242 standards.

Isolab

Capacity	Centre neck	Parallel side necks	PK	Cat. No.
ml	NS	NS		
100	14/23	14/23	1	9.140 361
250	14/23	14/23	1	9.140 362
100	24/29	14/23	1	9.140 363
250	24/29	14/23	1	9.140 364
500	24/29	14/23	1	9.140 365
1000	24/29	14/23	1	9.140 366
100	24/29	19/26	1	9.140 367
250	24/29	19/26	1	9.140 368
500	24/29	19/26	1	9.140 369
1000	24/29	19/26	1	9.140 370
2000	24/29	19/26	1	9.140 371
100	29/32	14/23	1	9.140 372
250	29/32	14/23	1	6.243 654
500	29/32	14/23	1	6.243 655
1000	29/32	14/23	1	6.243 656
2000	29/32	14/23	1	9.140 373
100	29/32	19/26	1	9.140 374
250	29/32	19/26	1	6.243 657
500	29/32	19/26	1	6.243 658
1000	29/32	19/26	1	6.243 659
2000	29/32	19/26	1	9.140 375
250	29/32	29/32	1	6.243 660
500	29/32	29/32	1	6.243 661
1000	29/32	29/32	1	6.243 662 1
2000	29/32	29/32	1	6.243 663
4000	29/32	29/32	1	9.140 377
6000	29/32	29/32	1	9.140 378



9.011 938

#### Three neck round bottom flasks, side necks parallel, DURAN®

DIN 12392 and in addition to DIN standard (\*). All necks are parallel.

Lenz

Capacity	Centre neck	Side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
100	24/29	19/26*	64	1	6.205 694
100	29/32	14/23*	64	1	9.011 933
100	29/32	19/26*	64	1	6.306 275
100	29/32	29/32	64	1	6.235 645
250	24/29	19/26*	85	1	7.021 838
250	29/32	14/23*	85	1	9.011 935
250	29/32	29/32*	85	1	9.011 936
500	24/29	19/26*	105	1	7.021 840
500	29/32	14/23*	105	1	9.011 938 2
500	29/32	19/26*	105	1	7.019 244
500	29/32	29/32*	105	1	9.011 939
1000	29/32	14/23*	131	1	9.011 941
1000	29/32	19/26*	131	1	6.203 572
1000	29/32	29/32	131	1	9.011 942
1000	45/40	29/32*	131	1	9.011 943
2000	29/32	14/23*	166	1	9.011 945
2000	29/32	19/26*	166	1	6.203 571
2000	29/32	29/32	166	1	9.011 946
2000	45/40	29/32	166	1	9.011 947
3000	29/32	29/32*	185	1	6.203 569
4000	29/32	14/23*	207	1	6.238 532
4000	29/32	29/32*	207	1	7.200 347
4000	45/40	29/32	207	1	9.011 950
5000	29/32	29/32*	223	1	6.306 286
5000	45/40	29/32*	223	1	9.011 949
6000	29/32	14/23*	236	1	6.803 543
6000	29/32	29/32	236	1	6.072 558
6000	45/40	29/32	236	1	9.011 951
10000	45/40	29/32*	279	1	9.011 952



## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

#### 1 Round bottom flasks with three necks, NS joints, angled arms, borosilicate glass 3.3



Manufactured from borosilicate glass 3.3. Conformed to DIN 12394.  
The side arms are at 45 degree angles with the centre neck.  
The NS necks are in compliance with DIN 12242 standards.

Isolab

Capacity	Centre neck	Angled side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
100	29/32	14/23	85	1	9.141 090
250	29/32	14/23	85	1	4.008 390
250	29/32	19/26	85	1	4.008 393
250	29/32	29/32	85	1	6.240 976
500	29/32	14/23	105	1	4.008 391
500	29/32	19/26	105	1	4.008 394
500	29/32	29/32	105	1	6.240 977
1000	29/32	14/23	131	1	4.008 392
1000	29/32	19/26	131	1	4.008 395
1000	29/32	29/32	131	1	6.240 978
2000	29/32	29/32	166	1	4.008 396



#### Round bottom flasks with ground glass joint, three neck, angled, DURAN®



DIN 12394 and in addition to standard (\*). Central neck with 2 x 20° angled side necks.

Lenz

Capacity	Centre neck	Side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
50	19/26	14/23*	51	1	6.202 804
100	24/29	19/26*	64	1	6.204 321
100	29/32	14/23*	64	1	9.011 953
100	29/32	19/26*	64	1	6.204 852
100	29/32	29/32*	64	1	7.019 272
250	24/29	19/26*	85	1	6.204 322
250	29/32	14/23	85	1	9.011 955
250	29/32	19/26	85	1	9.011 957
250	29/32	29/32	85	1	9.011 956
500	29/32	14/23*	105	1	9.011 958
500	29/32	19/26	105	1	9.011 960
500	29/32	29/32	105	1	9.011 959
1000	29/23	14/23	131	1	9.011 961
1000	29/32	19/26	131	1	9.011 964
1000	29/32	29/32*	131	1	9.011 962
1000	45/40	29/32*	131	1	9.011 963
2000	29/32	14/23	166	1	9.011 965
2000	29/32	29/32*	166	1	9.011 966
2000	45/40	29/32*	166	1	9.011 967
3000	29/32	29/32*	185	1	6.203 014
4000	29/32	29/32*	207	1	7.615 379
4000	45/40	29/32*	207	1	9.011 968
5000	45/40	29/32*	223	1	9.011 971
6000	45/40	29/32*	236	1	9.011 969
10000	45/40	29/32*	279	1	9.011 970



9.011 958

#### Nitrogen flasks with stopcock, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. NS necks are in compliance with DIN 12242 standards.  
With angled side neck with PTFE stopcock (2.5 mm hole).

Isolab

Capacity	Socket	PK	Cat. No.
ml	NS		
25	14/23	1	9.140 390
50	14/23	1	9.140 391
100	14/23	1	9.140 392
250	14/23	1	9.140 393
50	29/32	1	9.140 394
100	29/32	1	9.140 395
250	29/32	1	9.140 396
500	29/32	1	9.140 397
1000	29/32	1	9.140 398



9.140 397

## 6. Distillation, separation, filtration

GENERAL CATALOGUE EDITION 19

### Distillation, synthesis/Flasks with NS joint neck

1



6.307 327

#### Nitrogen Round-bottom Flasks (Schlenk-Flasks), DURAN®

With an angled side arm with 2.5 mm glass stopcock.

Lenz

Capacity	Socket	Bore	PK	Cat. No.
ml	NS	mm		
25	14/23	2.5	1	6.800 337
50	14/23	2.5	1	6.307 820
50	29/32	2.5	1	6.802 978
100	14/23	2.5	1	6.307 327 <b>1</b>
100	29/32	2.5	1	6.307 821
250	14/23	2.5	1	6.206 524
250	29/32	2.5	1	6.073 481
500	29/32	2.5	1	6.307 822
1000	29/32	2.5	1	6.307 823

2



7.610 673

#### Nitrogen Tubes (Schlenk-Tubes), DURAN® tubing

Made of DURAN® tubing. With conical joint and NS glass stopcock.

Lenz

Capacity	Centre neck	Bore	PK	Cat. No.
ml	NS	mm		
10	14/23 Socket	2.5	1	7.610 673 <b>2</b>
25	14/23 Socket	2.5	1	7.610 674
50	14/23 Socket	2.5	1	6.901 799
100	14/23 Socket	2.5	1	6.401 203
250	14/23 Socket	2.5	1	7.200 160

3



6.240 425

#### Flat bottom flasks, NS joint neck, borosilicate glass 3.3

Borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12394.

Isolab

Capacity	Socket	Height	PK	Cat. No.
ml	NS	mm		
50	19/26	100	1	6.243 607
50	24/29	100	1	6.243 608
50	29/32	100	1	4.008 377
100	14/23	110	1	6.243 609
100	19/26	110	1	6.243 610
100	24/29	110	1	6.243 611
100	29/32	110	1	6.236 773
250	19/26	140	1	6.243 612
250	24/29	140	1	6.243 613
250	29/32	140	1	6.238 346
500	24/29	170	1	6.243 614
500	29/32	170	1	6.240 425 <b>3</b>
1000	24/29	200	1	6.243 615
1000	29/32	200	1	4.008 378
2000	29/32	250	1	6.237 704

4



9.011 985

#### Flat bottom flasks with conical ground joint, DURAN®

According to DIN EN ISO 4797 and in addition to standard, with inscription label, material: DURAN®

Lenz

Volume	Socket	Flask external diam.	PK	Cat. No.
ml	NS	mm		
50	29/32	51	1	9.011 982
100	29/32	64	1	9.011 983
250	29/32	85	1	9.011 984
500*	29/32	105	1	9.011 985 <b>4</b>
1000	29/32	131	1	9.011 986

\*Supplementary to DIN.



## 6. Distillation, separation, filtration

### Distillation, synthesis/Flasks with NS joint neck

#### Erlenmeyer flasks, NS neck, borosilicate glass 3.3

Borosilicate glass 3.3. Conformed to DIN EN ISO 4797.

NS necks are in compliance with DIN 12242 standards.

Inscriptions are in white enamel which is specially designed for glass use.

Isolab

Capacity	Socket	Height	PK	Cat. No.
ml	NS	mm		
50	14/23	85	1	9.141 105
50	19/26	85	1	9.141 106
50	29/32	85	1	9.141 107
100	14/23	100	1	9.141 108
100	29/32	100	1	9.141 109
250	29/32	140	1	9.141 110
300	29/32	156	1	9.141 111
500	29/32	175	1	9.141 112
1000	29/32	220	1	9.141 113 1

1



9.141 113

#### Erlenmeyer flasks with ground glass joint, DURAN®

Acc. to DIN EN ISO 4797 and in addition to standard (\*), with scale (approx. volume/ml), with inscription label, material: DURAN®.

Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
10	14/23	42	1	6.200 447
25	14/23	42	1	9.012 001
25	19/26	42	1	7.019 150
50	14/23	51	1	9.012 002
50	24/29	51	1	7.019 155
50	29/32	51	1	9.012 012
100	14/23	64	1	9.012 003
100	24/29	64	1	7.019 156
100	29/32	64	1	9.012 013
200	29/32*	79	1	9.012 017
250	24/29	85	1	6.200 677
250	29/32	85	1	9.012 014
250	45/40*	85	1	9.012 006
300	29/32*	87	1	9.012 018
500	29/32	105	1	9.012 015 2
500	45/40*	105	1	9.012 008
1000	29/32	131	1	9.012 016
1000	45/40*	131	1	9.012 009
2000	29/32	166	1	9.012 019
2000	45/40*	166	1	9.012 010
3000	45/40	185	1	6.900 828
5000	45/40	223	1	7.607 913

2



9.012 015

#### Erlenmeyer flasks, NS neck, borosilicate glass 3.3, amber

Borosilicate glass 3.3, amber. Conformed to DIN EN ISO 4797.

NS necks are in compliance with DIN 12242 standards.

Isolab

Capacity	Socket	Height	PK	Cat. No.
ml	NS	mm		
100	29/32	100	1	6.258 244
250	29/32	140	1	6.258 150
500	29/32	175	1	6.255 806 3
1000	29/32	220	1	9.140 401

3



6.255 806

#### Iodine determination flasks, with and without collar, DURAN®

- With overflow collar and NS29/32 iodine stopper.

- Without overflow collar, with NS29/32 hollow hexagonal stopper.

Lenz

Capacity	Flask external diam.	Version	Description	PK	Cat. No.
ml	mm				
100	64	hollow	without collar	1	6.072 077
250	85	hollow	without collar	1	6.401 428
300	87	hollow	without collar	1	7.614 642 4
500	105	hollow	without collar	1	6.226 757
1000	131	hollow	without collar	1	6.230 605
100	64	iodine stopper	with collar	1	6.258 682
250	85	iodine stopper	with collar	1	6.230 826 5
500	105	iodine stopper	with collar	1	7.980 791

4



7.614 642

5



6.230 826

## 6. Distillation, separation, filtration

GENERAL CATALOGUE EDITION 19

### Distillation, synthesis/Components for reaction and distillation



1

#### 1 Distilling Adapters, borosilicate glass 3.3

**NEW!**

Isolab

Manufactured from borosilicate glass 3.3. Suitable to be used in distillation assemblies for connecting flasks to condenser. Upper socket designed to accept thermometer either by screw thread adapter or by thermometer socket. With side cone at 75° angled to the center socket.

Cone vertical	Cone obliquely	Socket	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	9.043 301
19/26	19/26	14/23	1	9.043 302
29/32	29/32	14/23	1	9.043 305



2

#### Distilling heads, DURAN® tubing

Lenz

Made of DURAN® tubing. Acc. to DIN 12594 and in addition to standard, with one NS 14/23 socket and two NS cones (descending angle: 75°), for distillation thermometers of 55 mm built-in length.

Cone vertical	Cone obliquely	Socket	PK	Cat. No.
NS	NS	NS		
29/32	29/32	14/23	1	9.012 173 2

9.012 173



3

#### Distilling Adapters, Claisen heads, borosilicate glass 3.3

**NEW!**

Isolab

Manufactured from borosilicate glass 3.3. Suitable to be used in distillation assemblies for connecting flasks to condenser. Upper socket designed to accept thermometer either by screw thread adapter or by thermometer socket. Claisen type has a similar use as a standard still head adapter but it is supplied with an extra socket to accept dropping funnels, stirrers and so on.

Cone vertical	Cone obliquely	Socket	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	9.043 306
19/26	19/26	14/23	1	9.043 307
29/32	14/23	14/23	1	9.043 310
29/32	29/32	14/23	1	9.043 311 3

9.043 311



4

#### Distilling heads acc. to Claisen, sloping, DURAN® tubing

Lenz

Made of DURAN® tubing. Acc. to DIN 12594 and in addition to standard (\*), with two parallel NS 14/23 sockets and two NS cones (descending angle: 75°), for distillation thermometers of 55 mm built-in length.

Cone vertical	Cone obliquely	Socket	PK	Cat. No.
NS	NS	NS		
29/32	14/23	14/23*	1	9.012 182
29/32	29/32	14/23	1	9.012 183 4

9.012 183



5

#### 5 Distilling links without condenser, borosilicate glass 3.3

**NEW!**

Isolab

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals.

Cone	Effective length mm	Description	PK	Cat. No.
NS				
14/23	150	Standard	1	9.012 287
29/32	350	Standard	1	9.012 288
14/23	150	with socket for thermometers	1	9.012 289
29/32	350	with socket for thermometers	1	9.012 290

## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### Distilling Links, DURAN® tubing

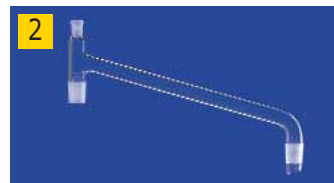
Made of DURAN® tubing. Distilling links without condenser, with two vertical NS-cones. With or without socket NS14/23 for distillation thermometers of 55mm built-in length.

Lenz

Cone	Socket	Effective length	PK	Cat. No.
NS	NS	mm		
29/32	-	350	1	9.012 203 <b>1</b>
29/32	14/23	350	1	9.012 213 <b>2</b>



9.012 203



9.012 213

#### **3** Stillheads, ground glass joint, with integral Liebig condenser

**(NEW!)**

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. With Liebig condenser and socket NS 14/23 for distillation thermometers. Available with or without vacuum receiver adapter.

Isolab

Cone	Socket	Effective length	Description	PK	Cat. No.
NS	NS	mm			
14/23	14/23	160	without vacuum receiver adapter	1	9.012 291
14/23	14/23	250	without vacuum receiver adapter	1	9.012 292
29/32	14/23	250	without vacuum receiver adapter	1	9.012 293
29/32	14/23	400	without vacuum receiver adapter	1	9.012 294
14/23	14/23	160	with vacuum receiver adapter	1	9.012 295
14/23	14/23	250	with vacuum receiver adapter	1	9.012 296
29/32	14/23	250	with vacuum receiver adapter	1	4.008 375
29/32	14/23	400	with vacuum receiver adapter	1	9.012 297



#### Distilling links with Liebig condenser, DURAN® tubing

Made of DURAN® tubing. DIN 12596. With Liebig condenser at 75° and vertical outlet with NS cone and vacuum connection with glass olives or thread GL14. With socket NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Cone	Socket	Effective length	Connection	PK	Cat. No.
NS	NS	mm			
14/23	14/23	160	GL	1	6.203 415
29/32	14/23	250	GL	1	6.203 416
14/23	14/23	250	GL	1	9.012 264
29/32	14/23	250	olive	1	9.012 266 <b>4</b>
29/32	14/23	400	olive	1	9.012 268



9.012 266

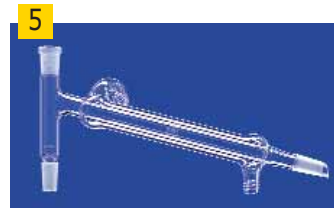
#### **5** Distilling links with Liebig condenser and GL thread, DURAN® tubing

**(NEW!)**

Made of DURAN® tubing. Distilling links with Liebig condenser, outlet with NS cone, water connection with thread GL14, with socket NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Cone	Socket	Effective length	PK	Cat. No.
NS	NS	mm		
14/23	14/23	160	1	6.202 281
14/23	14/23	250	1	6.243 055
29/32	14/23	250	1	6.230 719
29/32	14/23	400	1	6.243 056



#### Distilling links acc. to Claisen, with olive, DURAN® tubing

Made of DURAN® tubing. With Liebig condenser and Claisen head, water connection with glass olives, with two sockets NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Cone	Socket	Effective length	PK	Cat. No.
NS	NS	mm		
14/23	14/23	250	1	9.012 282
29/32	14/23	250	1	9.012 285 <b>6</b>



9.012 285



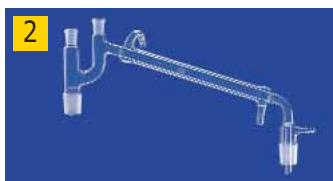
### 1 Distilling links with Liebig condenser and Claisen head



Isolab

With Liebig condenser and Claisen head and socket NS 14/23 for distillation thermometers, 55 mm fitting length. Available with or without vacuum receiver adapter.

Cone	Socket	Effective length	Description	PK	Cat. No.
NS	NS	mm			
14/23	14/23	160	distilling link standard	1	9.012 247
14/23	14/23	250	distilling link standard	1	9.012 248
29/32	14/23	250	distilling link standard	1	9.012 249
29/32	14/23	400	distilling link standard	1	9.012 250
14/23	14/23	160	distilling link with vakuum adapter	1	9.012 216
14/23	14/23	250	distilling link with vakuum adapter	1	9.012 217
29/32	14/23	250	distilling link with vakuum adapter	1	9.012 218
29/32	14/23	400	distilling link with vakuum adapter	1	9.012 219



9.012 276

### Distilling links acc. to Claisen with vacuum receiver adapter, DURAN® tubing

Made of DURAN® tubing. According to DIN 12594. With Liebig condenser (angled 75°) and vertical Claisen head, water and vacuum connection with olives. With two sockets NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Cone	Socket	Effective length	PK	Cat. No.
NS	NS	mm		
14/23	14/23	160	1	9.012 271
29/32	14/23	250	1	9.012 276 2



### 3 Distilling links acc. to Claisen with vacuum receiver adapter and GL thread, DURAN® tubing



Lenz

Made of DURAN® tubing. Distilling links acc. to DIN 12594, with Liebig condenser and Claisen head, thread connections: GL 14 (water) and GL 18 (vacuum), with two sockets NS 14/23 for distillation thermometers of 55mm built-in length.

Cone	Effective length	PK	Cat. No.
NS	mm		
14/23	160	1	9.012 272
14/23	250	1	9.012 274
29/32	250	1	9.012 275
29/32	400	1	9.012 279



### 4 Distillation adapters



Isolab

Manufactured from borosilicate glass 3.3. Suitable for feeding distillate from condensers into receiving flasks. Stem length is either 65 mm or 200 mm. Socket inclined 105° with outer tube of 12 mm diameter.

Socket	Length outlet pipe	PK	Cat. No.
NS	mm		
14/23	65	1	6.244 591
29/32	65	1	6.244 592
14/23	200	1	6.244 593
29/32	200	1	6.244 594



9.012 603



9.012 606

### Delivery adapters, short bent, DURAN® tubing

Made of DURAN® tubing. With socket and outlet tube angled at 105°, 12mm diameter.

Lenz

Socket	Length outlet pipe	PK	Cat. No.
NS	mm		
29/32	65	1	9.012 603 5
29/32	200	1	9.012 606 6

## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### 1 Bends



Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals.  
Suitable for the usage of assembling various reactor systems.  
Available in two shapes: bend with angle 75° or 90°.

Isolab

Angle	Cone	PK	Cat. No.
	<b>NS</b>		
75	14/23	1	9.012 653
75	29/32	1	9.012 654
90	14/23	1	9.012 655
90	29/32	1	9.012 656

1



#### Bends, DURAN® tubing

Made of DURAN® - tubing. Bent 75° or 90°. With two NS cones.

Lenz

Angle	NS	PK	Cat. No.
75	14/23	1	9.012 141
75	29/32	1	9.012 143 2
90	14/23	1	6.306 285
90	19/26	1	7.018 680
90	24/29	1	7.018 681
90	29/32	1	9.012 153 3

2



9.012 143

3



9.012 153

#### 4 Adapters bent or straight, borosilicate glass 3.3



Manufactured from borosilicate glass 3.3. Bent adapters are available as plain bend or bend with vent with 105° angled body shape.

Isolab

Description	Socket	Cone	PK	Cat. No.
	<b>NS</b>	<b>NS</b>		
Adapter, bent	14/23	14/23	1	6.243 602
Adapter, bent	29/32	29/32	1	6.243 603
Adapter, bent, with ventilation	14/23	14/23	1	9.012 657
Adapter, bent, with ventilation	29/32	29/32	1	9.012 658
Adapter, straight, with vacuum connector	14/23	14/23	1	9.012 659
Adapter, straight, with vacuum connector	29/32	29/32	1	9.012 660

4



#### Delivery adapter, DURAN® tubing

Made of DURAN® tubing. Delivery adapter, bent (105°), with NS socket and NS cone, with drain tip.

Lenz

Description	Socket	Cone	PK	Cat. No.
	<b>NS</b>	<b>NS</b>		
Adapter, bent	14/23	14/23	1	9.012 625
Adapter, bent	29/32	29/32	1	9.012 626 5

5



9.012 626



### 1 Distillation adapters, borosilicate glass 3.3

**NEW!**

Manufactured from borosilicate glass 3.3. Suitable for the usage of assembling with vacuum connections. Available in two shapes: straight or angled 105°.

*Isolab*

Description	Socket	Cone	PK	Cat. No.
	<b>NS</b>	<b>NS</b>		
adapters straight	14/23	14/23	1	<b>6.243 604</b>
adapters straight	29/32	29/32	1	<b>4.008 370</b>
adapters bend	14/23	14/23	1	<b>4.008 371</b>
adapters bend	29/32	29/32	1	<b>4.008 372</b>



9.012 621



9.012 623

### Receiver adapter, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12594, straight or bent (105°), with NS socket and cone, with drain tip, vacuum connection: glass olive.

*Lenz*

Description	Socket	Cone	PK	Cat. No.
	<b>NS</b>	<b>NS</b>		
adapters straight	14/23	14/23	1	<b>9.012 611</b>
adapters bend	14/23	14/23	1	<b>9.012 613</b>
adapters straight	29/32	29/32	1	<b>9.012 621 2</b>
adapters bend	29/32	29/32	1	<b>9.012 623 3</b>



### 4 Receiver adapters, with GL thread, DURAN® tubing

**NEW!**

Made of DURAN® tubing. Receiver adapters acc. to DIN 12594, straight or bent (angle: 105°), with NS socket and NS cone, with drain tip, vacuum connection: thread GL18.

*Lenz*

Description	Socket	Cone	PK	Cat. No.
	<b>NS</b>	<b>NS</b>		
adapters straight	14/23	14/23	1	<b>7.930 030</b>
adapters straight	29/32	29/32	1	<b>6.900 523</b>
adapters bend	14/23	14/23	1	<b>9.012 607</b>
adapters bend	29/32	29/32	1	<b>9.012 608</b>



### 5 Distilling adapters, Bredt type, borosilicate glass 3.3

**NEW!**

Manufactured from borosilicate glass 3.3. Suitable to be used in distillation assemblies to be connected to distilling distributor. Straight or bend 105° shape with vacuum connection.

*Isolab*

Description	Socket upper NS	Socket down NS	PK	Cat. No.
adapter straight	29/32	29/32	1	<b>9.012 635</b>
adapter bend	14/23	19/26	1	<b>9.012 636</b>



### 6 Distributors for Distilling Receivers to Bredt, DURAN® tubing

**NEW!**

Made of DURAN® tubing. With four cones NS 14/23, for round bottom flasks up to 250ml volume.

*Lenz*

Cone	PK	Cat. No.
<b>NS</b>		
19/26	1	<b>9.012 695</b>
29/32	1	<b>9.012 696</b>



## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### 1 Distilling receivers acc. to Bernauer, DURAN® tubing

Made of DURAN® tubing. With 3 cones NS 14/23, vacuum connection with glass olive.

Lenz

Type	Socket	Cone	PK	Cat. No.
	NS	NS		
Distilling Receivers, without flask	14/23	14/23	1	6.210 168
Distilling Receivers, without flask	29/32	14/23	1	6.236 954

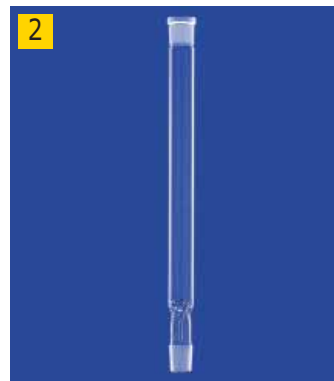


#### Columns, ground glass joint, Hempel, DURAN® tubing

Made of DURAN® tubing. With packing material support, ground glass cone and socket

Lenz

Socket	Cone	Fill height	PK	Cat. No.
NS	NS	mm		
14/23	14/23	300	1	9.012 321
29/32	29/32	300	1	9.012 322
29/32	29/32	800	1	9.012 326



9.012 322

#### 3 Columns acc. to Hempel with fixed vacuum jacket, DURAN® tubing



Made of DURAN® tubing. For packings like Raschig rings or glass beads, with NS socket and NS cone, with fixed vacuum jacket.

Lenz

Socket	Cone	Fill height	PK	Cat. No.
NS	NS	mm		
14/23	14/23	200	1	6.241 715
29/32	29/32	300	1	9.012 327
29/32	29/32	500	1	9.012 328
29/32	29/32	800	1	9.012 329



#### 4 Glass beads

Type AR soda lime glass. Supplied in packs of approx. 1kg.

Lindner

Ø mm	PK	Cat. No.
0,09 - 0,15	1	6.079 803
0,40 - 0,60	1	6.074 805
0,50 - 0,75	1	6.901 962
1,00 - 1,30	1	6.239 547
1,5 - 2	1	9.012 402
3	1	9.012 403
4	1	9.012 404
4,5	1	6.254 325
5	1	9.012 405
6	1	9.012 406
7	1	6.254 523
8	1	9.012 407
10	1	9.012 408
14	1	9.012 410



#### 5 Raschig rings, glass

Pack of 1 kg.

Hecht

Type	PK	Cat. No.
3x3	1	9.012 413
4x4	1	9.012 414
5x5	1	9.012 415
6x6	1	9.012 416
8x8	1	9.012 417



➔ Glass wool - please see page 1370.



9.012 336



9.012 330

## Columns acc. to Vigreux, with or without removable glass jacket

Made of DURAN® tubing.

Lenz

Type	NS	Effective length mm	PK	Cat. No.
without jacket	14/23	200	1	6.304 939
without jacket	14/23	300	1	6.900 157
without jacket	29/32	300	1	9.012 336 1
without jacket	29/32	600	1	9.012 337
with jacket	14/23	200	1	6.070 046
with jacket	14/23	300	1	6.079 073
with jacket	29/32	300	1	9.012 330 2
with jacket	29/32	600	1	7.628 209



## 3 Columns acc. to Vigreux with fixed vacuum jacket, DURAN® tubing.

Made of DURAN® tubing. With NS socket and NS cone, with fixed vacuum jacket.

Lenz

Fill height mm	NS	PK	Cat. No.
200	14/23	1	7.613 796
300	14/23	1	9.012 333
300	29/32	1	6.073 183
600	29/32	1	6.226 643



## 4 Drying tubes, PE-LD

Removable stoppers at both tube ends. With tubing nozzles, 4mm to 9mm o.d.

Kartell

Length mm	PK	Cat. No.
100	1	9.253 131
150	1	9.253 135
200	1	9.253 140



## 5 Drying tubes, U-pattern

Made of borosilicate glass 3.3. DIN 12610. Drying tubes with NS incl. interchangeable ground joint stopcocks. U-shape. Hose connectors 6mm in diameter.

NEW!

Isolab

Length mm	NS	Diam. mm	Description	PK	Cat. No.
100	-	13	without stopcock	1	9.140 515
130	-	13	without stopcock	1	9.140 516
180	-	18	without stopcock	1	9.140 517
100	14/23	13	with stopcock	1	9.140 518
130	14/23	13	with stopcock	1	9.140 519
180	19/26	18	with stopcock	1	9.140 520



## 6 Drying tubes

Made of borosilicate glass 3.3. Angled to 90°.

NEW!

Isolab

Length mm	Diam. mm	PK	Cat. No.
100	13	1	9.140 513
150	13	1	9.140 514



9.012 703

## Drying tubes, DURAN® tubing

Made of DURAN® tubing. Angled to 75°.

Lenz

Cone	PK	Cat. No.
NS		
14/23	1	9.012 701
29/32	1	9.012 703 7

## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### Multiple Adapters, 2 Necks



Made from borosilicate glass 3.3. With two sockets and one cone.  
One neck 105° upwards.

Isolab

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	6.243 740 <b>1</b>
19/26	19/26	19/26	1	6.243 741
29/32	29/32	14/23	1	9.140 502
29/32	29/32	29/32	1	9.140 503

1



6.243 740

#### 2 Multiple Adapters, 2 Necks

Made of DURAN® tubing. With two sockets and one cone.  
One neck 105° upwards.

Lenz

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	9.012 101
19/26	19/26	19/26	1	6.232 027
29/32	29/32	14/23	1	7.610 631
29/32	29/32	29/32	1	9.012 103

2



#### Multiple Adapters, 2 Necks



Made of borosilicate glass 3.3. Side neck parallel with centre neck. 2 x sockets 1 x cone.

Isolab

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	6.243 738
19/26	19/26	19/26	1	9.140 504
14/23	29/32	14/23	1	9.140 507
29/32	29/32	29/32	1	6.243 739 <b>3</b>

3



6.243 739

#### 4 Chemistry Set



Chemistry kit contains 16 pieces of various glassware all with common 14/23 NS sizes.  
Allows many micro experiments to be performed under vacuum or atmospheric pressure.  
Designed for the usage with relatively low quantities of 10 - 25 ml.  
Supplied in a sturdy hard plastic box with foam inserts to protect the parts.

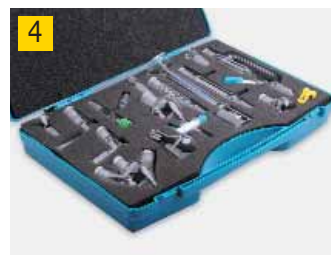
Isolab

Product descriptions of the set are shown as the below list.

1 x filter funnel, 1 x receiver adapter - short stem, 1 x stillhead with screwcap adapter, 1 x receiver adapter - with vent, 1 x pear shape flask with three necks - 25 ml, 1 x erlenmeyer flask - 25 ml, 1 x separating funnel - with PTFE key - 30 ml, 1 x vigreux fractionating column, 1 x measuring cylinder - 10 ml, 1 x beaker - low form - 25 ml, 1 x liebig condenser, 1 x flat bottom flask - 10 ml, 1 x keck clip, 1 x pressure equalising funnel - 10 ml, 2 x hexagonal stoppers.

Description	PK	Cat. No.
Mini volume chemistry kit	1	9.140 512

4



#### Adapters, ground glass joint, multiple, 2 neck

Made of DURAN® tubing. Acc. to DIN 12594 and in addition to DIN Standard (\*).  
Side neck parallel with centre neck. 2 x sockets 1 x cone.

Lenz

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
29/32	14/23	14/23*	1	6.232 074
14/23	14/23	14/23	1	9.012 121
29/32	29/32	29/32	1	9.012 123 <b>5</b>

5



9.012 123

## 6. Distillation, separation, filtration

GENERAL CATALOGUE EDITION 19

### Distillation, synthesis/Components for reaction and distillation

#### Splash head adapter, ground glass joint, borosilicate glass 3.3

Borosilicate glass 3.3. Suitable to be used in distillation assemblies to prevent raw liquid step over from flask to condenser.

Isolab

Socket	Cone	Description	PK	Cat. No.
<b>NS</b>	<b>NS</b>			
14/23	14/23	straight	1	4.008 373 <b>1</b>
29/32	29/32	straight	1	6.255 503
14/23	14/23	bend	1	9.140 508 <b>2</b>
29/32	29/32	bend	1	9.140 511



4.008 373



9.140 508

#### Splash heads acc. to Stutzel, straight or bent, DURAN® tubing

**NEW!**

Made of DURAN® tubing.

Two versions available:

- straight, with cone and socket
- bent with two cones at 75°.

Splash heads are directly placed onto distillation flasks for separation of drops.

Lenz

Cone	Socket / cone bent	Description	PK	Cat. No.
<b>NS</b>	<b>NS</b>			
14/23	29/32	straight	1	6.202 459
29/32	29/32	straight	1	9.012 193 <b>3</b>
29/32	29/32	bent	1	9.012 138 <b>4</b>



9.012 193



9.012 138



#### 5 Bellows, PTFE

**NEW!**

Stainless connection of ground joint equipment; for compensating vibrations from vacuum pumps; for length compensation of heated columns; angular misalignment.

Made of PTFE, with sharp folds and sealing rings on the outside; maximum deflection: 120°.

BOLA

Socket	Cone	Overall length	PK	Cat. No.
<b>NS</b>	<b>NS</b>	<b>mm</b>		
14/23	14/23	90	1	9.012 161
29/32	29/32	120	1	9.012 163

## 6. Distillation, separation, filtration

### Distillation, synthesis/Flat ground flange reaction vessels

#### 1 Vacuum sublimation apparatus

Enables effective cleaning of chemicals and substances that turn from solids to vapours directly without liquidifying first and solidifying again on cooling. The cleaned sublimate can be fully recovered from the conical cooler without difficulty once the sublimation process is complete.

Type	PK	Cat. No.
Micro apparatus, complete, sublimate quantity 1g to 2g	1	9.305 367
Semi-micro apparatus, complete, sublimate quantity 5g to 7g	1	9.305 368
Macro apparatus, complete, sublimate quantity 10g to 25g	1	9.305 369



#### 2 Reaction flasks, flat flange, DURAN®

Flanged neck with groove for vacuum use. 500ml and 1000ml vessels are completely cylindrical. *DURAN Group*  
Capacities indicated are brim-full volumes. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

Capacity ml	DN	Capacity ml	Flange diam. mm	Body diam. mm	Height mm	Pressure bar	PK	Cat. No.
100	60	195	100	70	85	2,5*	1	9.142 024
250	60	315	100	70	125	2,5*	1	9.142 036
500	100	740	138	106	120	1,5*	1	9.142 044
1000	100	1395	138	106	205	1,5*	1	9.142 054
2000	100	2620	138	140	270	1,5*	1	9.142 063
4000	150	5765	184	200	290	1,0*	1	9.142 071
6000	150	7320	184	215	320	1,0*	1	9.142 076

\* Maximum permissible operating pressure measured at 250°C.



#### 3 Flat flange beakers, DURAN®

Flanged neck with groove for vacuum use. Maximum 0.5bar working pressure at 250°C. *DURAN Group*  
Capacities indicated are brim-full volumes. We recommend that these beakers are heated in water or oil baths. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

Flange diameter: 158mm  
Beaker diameter: 130mm

Capacity ml	DN	Capacity ml	Height mm	PK	Cat. No.
1000	120	1360	125	1	9.142 271
2000	120	2200	200	1	9.142 272
3000	120	3220	290	1	9.142 273



#### 4 Flat ground flange lids, DURAN®

With four ground joint necks as outlined below. Centre neck NS 29/32. 1bar max. operating pressure at 250°C. Glass Type I/neutral glass as per USP, EP and JP. *DURAN Group*  
Autoclavable.

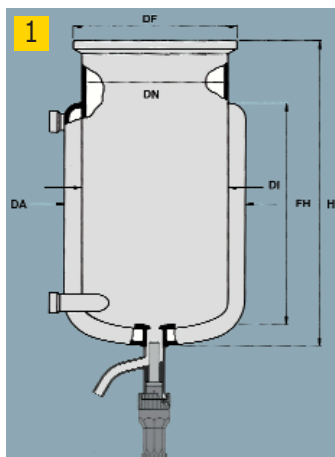
DN	Flange diam. mm	Height mm	Side necks NS	PK	Cat. No.
100	138	125	3 x 29/32 angled	1	9.142 246
100	138	105	2 x 29/32 angled, 1 x 14/23 parallel	1	9.142 476
120	158	130	2 x 29/32 angled, 1 x 14/23 parallel	1	9.142 251
150	184	130	3 x 29/32 parallel	1	9.142 257
150	184	130	2 x 29/32 angled, 1 x 14/23 parallel	1	9.142 259



## 6. Distillation, separation, filtration

### Distillation, synthesis/Flat ground flange reaction vessels

GENERAL CATALOGUE EDITION 19



#### 1 Flat ground flange reaction vessels, jacketed

Flange with groove in accordance with DIN 12214.

Flask with thermostatic jacket and type "T" 10mm bore PTFE drain valve.

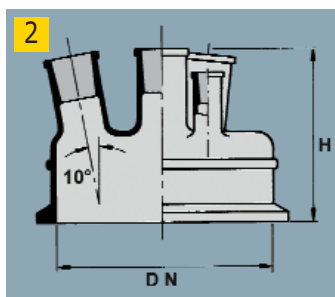
**Form**

**A = cylindrical form**

**B = short form**

Capacity	DN	Form	Widest A-Ø	Flange diam.	Height	Fill height	PK	Cat. No.
ml	mm		mm	mm	mm	mm		
250	100	A	140	138	140	50	1	9.142 037
500	100	A	140	138	165	75	1	9.142 038
1000	100	A	140	138	230	140	1	9.142 039
1000	120	A	160	158	210	110	1	9.142 040
2000	120	A	160	158	300	200	1	9.142 041
3000	120	A	160	158	390	290	1	9.142 042
2000	150	A	200	184	230	130	1	9.142 043
3000	150	A	200	184	295	190	1	9.142 045
4000	150	A	200	184	355	250	1	9.142 046
5000	150	A	200	184	400	300	1	9.142 047
6000	150	A	200	184	450	350	1	9.142 048
6000	150	B	250	184	360	260	1	9.142 049
10000	150	A	200	184	675	575	1	9.142 050
10000	150	B	300	184	450	290	1	9.142 051

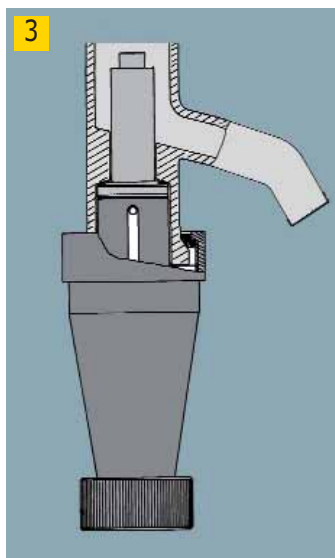
Further accessories and spare parts available on request.



#### 2 Flat flange lids

Flange in accordance with DIN 12214.

Flange DN	Centre neck	Angled side necks	Parallel side necks	Height	PK	Cat. No.
mm	NS	NS	NS	mm		
100	29/32	2 x 29/32	-	125	1	9.142 120
100	29/32	-	2 x 29/32	125	1	9.142 121
100	29/32	2 x 29/32	1 x 14/23	125	1	9.142 122
100	29/32	2 x 29/32	2 x 29/32	125	1	9.142 123
100	45/40	2 x 29/32	-	150	1	9.142 124
100	45/40	2 x 29/32	1 x 14/23	150	1	9.142 126
100	45/40	2 x 29/32	2 x 29/32	150	1	9.142 127
120	29/32	2 x 29/32	-	125	1	9.142 128
120	29/32	-	2 x 29/32	125	1	9.142 129
120	29/32	2 x 29/32	1 x 14/23	125	1	9.142 130
120	29/32	2 x 29/32	2 x 29/32	125	1	9.142 131
120	45/40	2 x 29/32	-	150	1	9.142 132
120	45/40	-	2 x 29/32	150	1	9.142 133
120	45/40	2 x 29/32	1 x 14/23	150	1	9.142 134
120	45/40	2 x 29/32	2 x 29/32	150	1	9.142 135
150	29/32	2 x 29/32	-	125	1	9.142 136
150	29/32	-	2 x 29/32	125	1	9.142 137
150	29/32	2 x 29/32	1 x 14/23	125	1	9.142 138
150	29/32	2 x 29/32	2 x 29/32	125	1	9.142 139
150	45/40	2 x 29/32	-	150	1	9.142 140
150	45/40	-	2 x 29/32	150	1	9.142 141
150	45/40	2 x 29/32	1 x 14/23	150	1	9.142 142
150	45/40	2 x 29/32	2 x 29/32	150	1	9.142 143



#### 3 Reaction vessel accessories

**PTFE drain valves, complete:**

**Model "T"** (Standard for vessels with NW 100 to NW 200 flanges): PTFE, 10mm bore drain valve with no dead volume, key plug that seals on the base of the vessel, with maximum opening 35mm, self-adjusting, centring hub, visible wear indication and integral glass angled outlet.

For standard applications with liquids of different viscosity.

**Model "H"**

generally as Model "T", but with 20mm bore and max. opening 70mm.

**Model "H/Pt 100"**

generally as Model "H", but with integral Pt100 sensor to enable easy measurement of sump temperature.

Type	PK	Cat. No.
Model "T" standard	1	9.142 001
Model "H" added price for execution	1	9.142 002
Model "H/Pt 100" added price for execution	1	9.142 003

Further accessories and spare parts available on request.



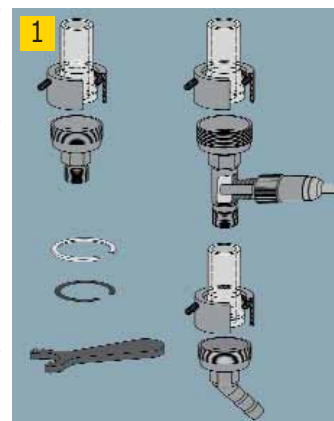
## 6. Distillation, separation, filtration

### Distillation, synthesis/Flat ground flange reaction vessels

#### 1 Tubing adapters for heating and cooling connection

For metal or standard tubing connectors with secure, quick attachment/release, using spring insert technology.

Type	PK	Cat. No.
For DN 15, M 16 x 1 thread	1	9.142 004
For DN 15, M 24 x 1.5 thread	1	9.142 005
For DN 15, M 16 with integral Pt100	1	9.142 006
For DN 15, D11 olive-shaped connection	1	9.142 007
For DN 15, D13 olive-shaped connection	1	9.142 008
PTFE comb seal DN 15	1	9.142 009
Graphited flat seal for temperatures above +150°C	1	9.142 010
Pin spanner for DN 15 metal adapter to ensure secure mounting	1	9.142 011

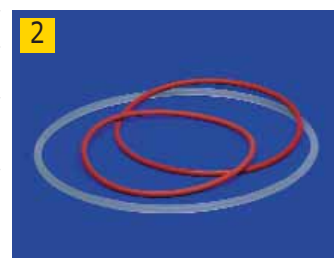


#### 2 O-rings

VMQ silicone. With, or without, FEP coating.

Lenz

Type	For flange DN	Diam. mm	Thickness mm	PK	Cat. No.
VMQ	60	75	4	1	9.142 834
VMQ	100	110	4	1	9.142 846
VMQ	150	150	5	1	9.142 857
VMQ + FEP	60	75	4	1	9.142 866
VMQ + FEP	100	110	4	1	9.142 867
VMQ + FEP	150	150	5	1	9.142 868
VMQ + FEP	200	215	5	1	9.142 869



#### Quick-acting closures

Stainless steel. With three-part caliper clamps.

Lenz

For flange DN	PK	Cat. No.
60	1	9.142 934
100	1	9.142 946 <sup>3</sup>
120	1	9.142 951
150	1	9.142 957
200	1	9.142 964



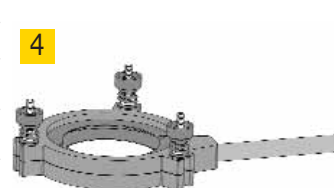
9.142 946

#### 4 Supporting ring

**NEW!**

H.W.S.

Description	PK	Cat. No.
Supporting ring DN 60 Polyester, with support DIN	1	6.229 692
Supporting ring DN 100 Polyester, with support DIN	1	6.229 695
Supporting ring DN 120 Polyester, with support DIN	1	9.011 736
Supporting ring DN 150 Polyester, with support DIN	1	9.011 735



## 6. Distillation, separation, filtration

GENERAL CATALOGUE EDITION 19

### Distillation, synthesis/KPG stirrer and bearings



#### 1 2 KPG stirrer shafts, DURAN®

DURAN®. Interchangeable. Bearing surface ground and polished.

DURAN Group

WG: 4 fixed blades  
WS: 2 movable blade  
KPG diameter: 10mm  
KPG length: 160mm.

Type	Length mm	For neck diam. mm	PK	Cat. No.
WG 10	320	60	1	9.197 321
WG 10	370	60	1	9.197 322
WS 10	320	25	1	9.197 311
WS 10	370	25	1	9.197 312
WS 10	410	25	1	9.197 313
WS 10	440	25	1	9.197 314



#### 3 KPG stirrer bearings, DURAN®

Interchangeable. Bearing surface ground, polished.

DURAN Group

With or without standard ground cone NS 29/32.

Type	Cone NS	Diam. mm	Height mm	PK	Cat. No.
HA 10	no	10	65	1	9.197 251
HB 10	no	10	75	1	9.197 252
HB 16	no	16	90	1	9.197 257
HQ 10	yes	10	75	1	9.197 253
HT 10	yes	10	65	1	9.197 256
HT 16	yes	16	85	1	9.197 258



9.198 050

#### Stirrer with stirrer adapter, DURAN® tubing

Made of DURAN® tubing. For round bottom flasks 250 to 2000ml.

Lenz

Stirrer shaft, with PTFE stirrer blade and fixing screw. Seals vacuum stirring apparatus gas-tight to  $10^{-3}$  mbar up to a permanent load of 800rpm.

Type	PK	Cat. No.
Stirrer with Stirrer Bearing, complete	1	9.198 050 4
Shaft, Dia. 10 x L 400mm	1	6.802 957
Blade, PTFE, 70x24x3mm	1	6.204 794
Screw, PTFE	1	6.204 795
Sealing, PTFE	1	7.616 277
Closure, thread GL 25, cone NS 29/32	1	6.258 683
Pressure spring, stainless steel	1	6.258 684
Screw cap GL 25, PP	1	6.258 685



#### 5 Stirrer bearings with cooling jacket, DURAN® tubing



Made of DURAN® tubing. Stirrer bearings with NS cone and cooling water connections (thread GL14), bearing surface ground and polished.

Lenz

Cone NS	For diam. stirring rod mm	PK	Cat. No.
29/32	10	1	6.234 956
45/40	16	1	6.234 957



9.197 355

#### Stirrer bearings with GL male thread, DURAN® tubing

Made of DURAN® tubing.

Lenz

Other materials used: PTFE (bearing), silicone (gasket) and stirrer guides, GL male thread.

Cone size 29/32. Guide bore 10mm i.d.

Neck thread GL	Cone NS	Ø agitator shaft mm	Overall length mm	PK	Cat. No.
25	29/32	10	90	1	9.197 355 6
25	45/40	10	110	1	6.223 283
32	45/40	16	118	1	9.197 356

## 6. Distillation, separation, filtration

### Distillation, synthesis/KPG stirrer and bearings-Dropping Funnels

#### 1 Stirrer Bearings, PTFE

The sealing rings on these bearings ensure a perfect sealing. The ground joint no longer sticks, the danger of breaking is reduced and the cone can be removed easily from the socket. *BOLA*  
A special gasket made of PTFE and an FPM o-ring which is compressed by a GL screw cap provide a good sealing of the stirrer shaft. This gasket can be exchanged after wearing. Suitable for vacuum, perfect bearing for stainless steel, glass and BOLA Stirrer Shafts.

Cone	For diam. stirring rod	Overall length	Neck thread	PK	Cat. No.
NS	mm	mm	GL		
29/32	6	72	18	1	6.087 538
29/32	8	74	25	1	6.076 532
29/32	10	72	25	1	6.088 058

#### 2 Stirrer bearings with dynamic double seal

Stirrer bearings for applications under vacuum or under slight overpressure. *Lenz*  
With extended guidance for reduced vibrations and a longer lifetime.  
Material: borosilicate glass 3.3 (closure), PTFE (sealings)

For diam. stirring rod	NS	PK	Cat. No.
mm			
10	29/32	1	7.629 417
10	45/40	1	9.197 359
16	29/32	1	9.197 363
16	45/40	1	9.197 364

#### Dropping funnels, cylindrical, with or without pressure equalizing tube, borosilicate glass 3.3

Borosilicate glass 3.3, cylindrical shape, with or without pressure equalising tube. *Isolab*  
DIN 12451 and DIN 12567.

Capacity ml	NS	Type	PK	Cat. No.
50	19/26	with relief tube	1	9.140 415
100	19/26	with relief tube	1	4.008 428 <sup>3</sup>
250	29/32	with relief tube	1	6.240 982
500	29/32	with relief tube	1	6.240 983
1000	29/32	with relief tube	1	9.140 416
50	19/26	without with relief tube	1	9.140 410
100	19/26	without with relief tube	1	9.140 411
250	29/32	without with relief tube	1	9.140 412
500	29/32	without with relief tube	1	9.140 413
1000	29/32	without with relief tube	1	9.140 414

#### Dropping funnels, cylindrical, with pressure equalising tube, borosilicate glass 3.3

Borosilicate glass 3.3. Cylindrical shape, with pressure equalising tube. *Lenz*  
With NS socket and interchangeable PE stopper, plug with retaining device.  
With graduations for reading of the approx. volume.  
Two types available:  
- With solid glass key  
- With PTFE key

Capacity ml	NS	Bore mm	Grad. ml	Keys	PK	Cat. No.
25	14/23	2.5	1	solid	1	6.072 172
50	14/23	2.5	1	solid	1	9.012 755
50	29/32	2.5	1	solid	1	9.012 767
100	14/23	2.5	2	solid	1	9.012 756
100	29/32	2.5	2	solid	1	9.012 768
250	14/23	4.0	5	solid	1	9.012 757
250	29/32	4.0	5	solid	1	9.012 769 <sup>4</sup>
500	29/32	4.0	10	solid	1	9.012 770
1000	29/32	6.0	20	solid	1	7.601 147
25	14/23	2.5	1	PTFE	1	9.012 751
50	14/23	2.5	1	PTFE	1	9.012 752
50	29/32	2.5	1	PTFE	1	6.223 427
100	14/23	2.5	2	PTFE	1	9.012 753
100	29/32	2.5	2	PTFE	1	6.900 312
250	29/32	4.0	5	PTFE	1	9.012 764 <sup>5</sup>
500	29/32	4.0	10	PTFE	1	9.012 765
1000	29/32	6.0	20	PTFE	1	9.012 766



4.008 428



9.012 769



9.012 764



9.012 471

**Air condensers without jacket, DURAN® tubing**

Made of DURAN® tubing. For easily condensable vapours. With NS cone and drain ring.

Lenz

Length mm	Cone NS	PK	Cat. No.
700	14/23	1	9.012 470
1000	29/32	1	9.012 471 1

**2 Condensers, ground glass joint, Dimroth, borosilicate glass 3.3, PP-olive**

Made of borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12591. Supplied with polypropylene side arm, which has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubing with 8/9mm bore size.

Isolab

Effective length mm	NS	Description	PK	Cat. No.
250	29/32	with PP side arm	1	9.012 547
400	29/32	with PP side arm	1	9.012 545

**3 Condensers, ground glass joint, Dimroth, borosilicate glass 3.3.**

Made of borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12591. Supplied with glass side arms. The side arms accept tubing with 8/9mm bore size.

Isolab

Effective length mm	Cone NS	Socket NS	PK	Cat. No.
160	14/23	14/23	1	9.012 525
160	29/32	29/32	1	9.012 526
250	14/23	14/23	1	9.012 527
250	29/32	29/32	1	6.258 228
400	14/23	14/23	1	9.012 528
400	29/32	29/32	1	6.243 670



9.012 533

**Condensers acc. to Dimroth, ground glass joint, PP-olive, DURAN® tubing**

Made of DURAN® tubing. DIN 12591. With NS cone and socket. Water connection GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	PK	Cat. No.
160	14/23	14/23	1	9.012 530
250	29/32	29/32	1	9.012 533 4
400	29/32	29/32	1	9.012 534

**5 Condensers, ground glass joint, Allihn**

Manufactured from borosilicate glass 3.3 according to DIN 12581 standard. Supplied with glass side arm. The side arms accept tubings with 8/9 mm bore size.

Isolab

Effective length mm	Cone NS	Socket NS	PK	Cat. No.
160	14/23	14/23	1	9.012 507
250	14/23	14/23	1	9.012 509
250	29/32	29/32	1	6.253 331
400	14/23	14/23	1	9.012 510
400	29/32	29/32	1	6.243 669

## 6. Distillation, separation, filtration

### Distillation, synthesis/Reflux condenser

#### 1 Condensers, ground glass joint, Allihn, borosilicate glass 3.3

Borosilicate glass 3.3 which is resistant to heat and almost all chemicals. According to DIN 12581. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9mm bore size.

Isolab

Effective length mm	NS	Description	PK	Cat. No.
160	29/32	with PP side arm	1	4.008 406
400	29/32	with PP side arm	1	4.008 408



#### Condensers acc. to Allihn, ground glass joint, PP-olive, DURAN® tubing

Made of DURAN® tubing. DIN 12581. For condensing vapours. With NS cone and socket water connection GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	Bulbs	PK	Cat. No.
160	14/23	14/23	4	1	9.012 511
160	19/26	19/26	4	1	9.012 516
250	29/32	29/32	5	1	9.012 517 2
400	29/32	29/32	8	1	9.012 515
250	19/26	19/26	5	1	6.236 022
250	14/23	14/23	5	1	6.251 366
160	29/32	29/32	4	1	9.012 518



9.012 517

For all condensers are other sizes available on request.

#### 3 Spiral condensers, borosilicate glass 3.3

Made of borosilicate glass 3.3 which is resistant to heat and almost all chemicals. According to DIN 12592. Supplied with either glass side arm or polypropylene side arm. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9mm bore size.

Isolab

Effective length mm	NS	Description	PK	Cat. No.
160	14/23	with glass side arm	1	9.012 548
250	29/32	with glass side arm	1	6.257 821
400	29/32	with glass side arm	1	4.008 411
160	14/23	with PP side arm	1	4.008 412
250	29/32	with PP side arm	1	6.257 820
400	29/32	with PP side arm	1	4.008 414



#### Spiral condensers, PP-olive, DURAN® tubing

Made of DURAN® tubing. For cooling condensates. Water connections with glass olives or GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	Connection	PK	Cat. No.
160	14/23	14/23	GL14	1	9.012 522
400	29/32	29/32	GL14	1	6.225 557
250	29/32	29/32	GL14	1	9.012 523 4
500	29/32	29/32	GL14	1	9.012 524



9.012 523

## Distillation, synthesis/Reflux condenser



9.012 543

### Coil condensers, DURAN® tubing

Made of DURAN® tubing. DIN 12593. With jacketed cooling coil. Water connection with glass olives or GL14 thread , with two threaded, plastic olives.

Lenz

Effective length	Cone	Socket	Connection	PK	Cat. No.
mm	NS	NS			
160	29/32	29/32	glas	1	7.635 816
250	29/32	29/32	glas	1	6.227 832
400	29/32	29/32	glas	1	6.240 342
500	29/32	29/32	glas	1	7.970 241
160	14/23	14/23	GL14	1	6.900 522
160	29/32	29/32	GL14	1	9.012 542
250	29/32	29/32	GL14	1	9.012 543 1
400	29/32	29/32	GL14	1	9.012 544



### 2 3 Condensers acc. to Davies, DURAN® tubing



Made of DURAN® tubing. For condensing vapours, with NS socket and cone, with double sized cooling area, water connection: GL14 or glass olive threads with two threaded plastic olives.

Lenz

Effective length mm	NS	Connection	PK	Cat. No.
250	19/26	nozzle	1	6.800 239
250	24/29	nozzle	1	6.228 159
250	29/32	GL 14	1	6.803 017



### 4 Condensers, ground glass joint, Liebig, borosilicate glass 3.3

Made of borosilicate glass 3.3 which is resistant to heat and almost all chemicals. According to DIN 12576. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9mm bore size.

Isolab

Effective length mm	NS	Description	PK	Cat. No.
250	29/32	with PP side arm	1	9.012 546
400	29/32	with PP side arm	1	4.008 405
250	29/32	with glass side arm	1	7.970 278
400	29/32	with glass side arm	1	6.236 239
160	14/23	with glass side arm	1	9.012 535
250	14/23	with glass side arm	1	9.012 536
400	14/23	with glass side arm	1	9.012 537



9.012 505

### Condensers acc. to Liebig, ground glass joint, DURAN® tubing

Made of DURAN® tubing. DIN 12576 and in addition to DIN standard (\*). With NS cone and socket.

Lenz

Water connection: glass olives or GL14 threads with two threaded plastic olives.

Effective length	Socket	Cone	Ext. diam.	Int. diam.	Connection	PK	Cat. No.
mm	NS	NS	mm	mm			
160	14/23	14/23	20	12	GL	1	9.012 502
160	19/26	19/26	24	16	GL	1	9.012 501
250	29/32	29/32	24	16	GL	1	9.012 505 5
400	29/32	29/32	24	16	GL	1	9.012 506



### 6 Keck adapters KA 14

Glass fibre reinforced thermoplastic polyester (PBT).

Melting point 225°C. Temperature and chemically resistant. For quick, secure, tight connection of tubing with glass screwthreads and ferrules.

For	Colour	PK	Cat. No.
Glass ferrule GL 14 complete	yellow	1	9.208 931
Glass ferrule RD 14 complete	red	1	9.208 941
Glass screwthread GL 14	yellow	1	9.208 930
Glass screwthread RD 14	red	1	9.208 940



### 1 Air leak rod, DURAN®

With bulb (Diameter: 6mm, Wall thickness: 1.5mm).

Length mm	Diam. mm	PK	Cat. No.
180	4	1	9.012 302



### Gas inlet tubes, straight, ground glass joint, DURAN® tubing

Made of DURAN® tubing. Straight air leak tubes, built-in length: 200mm, with NS cone and thin capillary (easily to draw by burner).

Lenz

Cone	Diam.	Length	PK	Cat. No.
NS	mm	mm		
14/23	6	200	1	9.012 301
29/32	8	200	1	6.239 812



9.012 301

### Gas inlet tubes, bent, DURAN® tubing

Made of DURAN® tubing. Bent air leak tubes (angle: 90°), built-in length: 250mm, with NS cone and thin capillary (easily to draw by burner).

Lenz

Cone	Diam.	Length	PK	Cat. No.
NS	mm	mm		
14/23	6	250	1	9.012 303
29/32	8	250	1	9.012 305



9.012 303

### 4 Gas inlet tube with valve stopcock, DURAN® tubing

Made of DURAN® tubing. With valve stopcock for dosing, with glass olive (angle: 90°), with cone NS14/23, tube length from top of the joint: approx. 150mm.

Lenz

NS	PK	Cat. No.
14/23	1	6.200 985



### 5 Air regulator Type HM-2

For tubes:

8mm to 15mm diameter, 6mm to 12.5mm diameter

For air-leak capillary tubes. Acts as a fine regulation valve (needle valve).

Plastic body. Brass needle with fine thread.

Type	PK	Cat. No.
HM-2	1	9.194 011



### 6 Boiling stones, Type A

Developed for use in preparatory work. For distillation and reflux in aqueous, neutral and alkaline solvents, even under a vacuum. Effective in even the smallest volumes of liquid and after multiple interruptions. Prevents any bumping. Natural product.

Capacity g	PK	Cat. No.
250	1	9.012 306





#### 1 Boiling stones, Type B

Specifically for analytical work. Can be used for distillation in a clean, neutral and basic environment. Not suitable for vacuum distillation. Effective in the smallest amounts of liquid, also after multiple distillations. Prevents "bumping". Ceramic product with relatively high level of purity and abrasion resistance.

Capacity	PK	Cat. No.
g		
200	1	9.012 307



#### 2 Boiling stones behrotest®

behrotest® boiling stones are made from a ceramic material. Compared to conventional boiling stones made of glass, they provide optimum protection against defervescence due to their porosity and their shape, even with badly blended samples. behrotest® boiling stones are chemically pure and guarantee unadulterated results when determining the COD, the Kjeldahl nitrogen etc. *Behr*

Capacity	PK	Cat. No.
g		
100	1	9.920 710



#### 3 Boiling chips, type Resistent

Developed for preparatory and analytical purposes. Suitable for biochemistry, biotechnology, microbiology, microanalysis. Can even be used in strong acids and alkalis, and in all solvents and oxidants. Suitable for vacuum and high-vacuum distillation. Reduces distillation times in rotary evaporators. No abrasion, absorption of substances or solvents. Softening (evaporation) occurs at 2500°C. Can be sterilised by dry heating. Effective in even the smallest volumes of liquid, even after multiple interruptions. Prevents any bumping. Highly resistant.

Capacity	PK	Cat. No.
g		
50	1	9.012 308

➔ Hotplates - please see page 775.

We can supply this  
manufacturer's  
whole  
product range !

partner of the  
**LLG**  
Lab Logistics Group

**behr**  
Labor-Technik

## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for Extraction

#### 1 Separating funnels, Squibb-pattern, borosilicate glass 3.3

Supplied with PTFE stopcock, graduated or ungraduated. According to DIN 12452.  
With PP conical stopper.

Isolab

Capacity	NS	Description	Bore	PK	Cat. No.
ml			mm		
50	19/26	ungraduated	2.5	1	4.008 422
100	19/26	ungraduated	2.5	1	6.241 670
250	29/32	ungraduated	4.0	1	6.238 526
500	29/32	ungraduated	4.0	1	6.238 527
1000	29/32	ungraduated	6.0	1	6.241 669
2000	29/32	ungraduated	6.0	1	6.241 668
50	19/26	graduated	2.5	1	6.236 317
100	19/26	graduated	2.5	1	6.236 318
250	29/32	graduated	4.0	1	6.236 319
500	29/32	graduated	4.0	1	6.236 320
1000	29/32	graduated	6.0	1	6.236 321
2000	29/32	graduated	6.0	1	6.240 412

1



#### Separating funnels acc. to Squibb, borosilicate glass 3.3

With PTFE plug. Available with or without graduations to read the approximate volume.  
With PE-stopper and PTFE plug.

Lenz

Capacity	Socket	Description	Bore	PK	Cat. No.
ml	NS		mm		
50	19/26	ungraduated	2.5	1	9.203 322
100	19/26	ungraduated	2.5	1	9.203 323
250	29/32	ungraduated	4.0	1	9.203 325
500	29/32	ungraduated	4.0	1	9.203 328
1000	29/32	ungraduated	6.0	1	9.203 330
2000	29/32	ungraduated	6.0	1	9.203 332
50	19/26	graduated	2.5	1	9.203 372
100	19/26	graduated	2.5	1	9.203 373
250	29/32	graduated	4.0	1	9.203 375 2
500	29/32	graduated	4.0	1	9.203 376
1000	29/32	graduated	6.0	1	9.203 377
2000	29/32	graduated	6.0	1	9.203 378

2



9.203 375

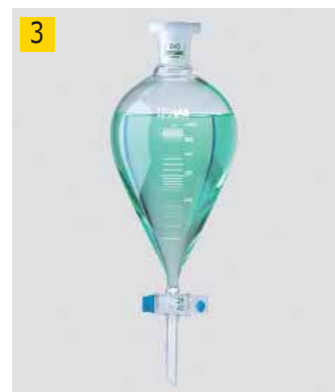
#### Separating funnels, conical, borosilicate glass 3.3

Supplied with PTFE stopcock, graduated or ungraduated. According to DIN 12451.  
With PP conical stopper.

Isolab

Capacity	NS	Description	Bore	PK	Cat. No.
ml			mm		
50	19/26	ungraduated	2.5	1	4.008 423
100	19/26	ungraduated	2.5	1	4.008 424
250	29/32	ungraduated	4.0	1	6.242 395
500	29/32	ungraduated	4.0	1	4.008 425
1000	29/32	ungraduated	6.0	1	6.242 694
2000	29/32	ungraduated	6.0	1	4.008 426
50	19/26	graduated	2.5	1	4.008 427
100	19/26	graduated	2.5	1	6.241 980
250	29/32	graduated	4.0	1	6.241 671
500	29/32	graduated	4.0	1	6.241 981
1000	29/32	graduated	6.0	1	6.244 011 3
2000	29/32	graduated	6.0	1	6.242 394

3



6.244 011





9.203 486

#### Separating funnels, conical, borosilicate glass 3.3

Conical pattern. With glass stopcock, PTFE key and retaining device.  
Available with or without, graduations to read the approximate volume. With PP conical stopper.

Lenz

Capacity ml	NS	Description	Bore mm	PK	Cat. No.
50	19/26	ungraduated	2.5	1	9.203 462
100	19/26	ungraduated	2.5	1	9.203 463
250	29/32	ungraduated	4.0	1	9.203 465
500	29/32	ungraduated	4.0	1	9.203 466
1000	29/32	ungraduated	6.0	1	9.203 467
2000	29/32	ungraduated	6.0	1	9.203 468
50	19/26	graduated	2.5	1	9.203 482
100	19/26	graduated	2.5	1	9.203 483
250	29/32	graduated	4.0	1	9.203 485
500	29/32	graduated	4.0	1	9.203 486 1
1000	29/32	graduated	6.0	1	9.203 487
2000	29/32	graduated	6.0	1	9.203 488



#### 2 Separating funnels with screw cap, Type 4301, FEP

Transparent. Teflon® FEP, Tefzel® ETFE stopcock and ETFE screw cap. Impact resistant.  
Non-wetting surfaces ensure no liquid residue adhesion. Chemically stable.  
Length of stem under stopcock 65mm. Autoclavable.

Thermo Scientific

Type	Capacity ml	Screw cap diam. mm	PK	Cat. No.
4301	125	28	1	9.203 531
4301	250	33	1	9.203 532
4301	500	43	1	9.203 533
4301	1000	53	1	9.203 534
4301	2000	53	1	9.203 535

Teflon® and Tefzel® are registered trademark of DuPont.



#### 3 Separating funnel holder PP

Manufactured from best quality polypropylene. Suitable to hold all types of laboratory funnels and also separatory funnels with diameter up to 150mm.  
Two tapered wedges are provided to ensure firm grip.

Isolab

Description	PK	Cat. No.
Separating funnel holder	1	9.251 559



#### 4 Water estimator to Dean Stark, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 according to DIN 12420. Suitable for xylol method.  
System completed with 500 ml (NS 29/32) flask + Liebig condenser with jacket length 400 mm  
+ measuring tube (10:0.1 ml) with PTFE stopcock.

NEW!

Isolab

Description	PK	Cat. No.
Water estimator to Dean Stark	1	9.303 005

➔ Support rings - please see page 168.

➔ For complete distillation systems, please see page 1154.

### 1 Extractors acc. to Knöfler-Böhm, DURAN® tubing



Lenz

The condensate passes the extraction sample and flows back into the flask continuously without interrupting the extraction process, i.e. the solvent is recirculated continuously.

The complete apparatus consists of:

Jacketed extractor head made of DURAN® tubing, Dimroth condenser with thread GL 14, made of DURAN® tubing, Round bottom flask material: DURAN®

Extractor	Condenser	Round bottom flasks	PK	Cat. No.
ml	NS	Capacity ml		
30	29/32	100	1	6.237 313
150	45/40	250	1	6.237 312
250	45/40	500	1	9.043 010
500	60/46	1000	1	9.043 020



### 2 Soxhlet extractors, without stopcock

Borosilicate glass 3.3 which is resistant to heat and almost all chemicals. According to DIN 12602. The side arms accept tubings with 8/9mm bore size.

Isolab

Capacity	Cone	Socket	PK	Cat. No.
ml	NS	NS		
30	29/32	29/32	1	4.008 417
70	29/32	34/35	1	4.008 418
100	29/32	45/40	1	4.008 419
150	29/32	45/40	1	4.008 420
250	29/32	45/40	1	4.008 421
500	29/32	45/40	1	6.243 673



➡ Complete serial extraction systems - please see page 1149.

➡ Extraction thimbles - please see page 1147.

### Soxhlet Extraction stillheads

Soxhlet Extraction stillheads, made of DURAN® tubing.

Extractor heads acc. to DIN 12602 and in addition to DIN standard.

For extractor	Cone	Socket	PK	Cat. No.
ml	NS	NS		
30	29/32	29/32	1	9.043 011
70	29/32	34/35	1	9.043 012
100	29/32	45/40	1	9.043 013
150	29/32	45/40	1	9.043 014
200	29/32	45/40	1	9.043 018
250	29/32	45/40	1	9.043 015
300	29/32	60/46	1	9.043 019
500	29/32	60/46	1	9.043 016
1000	29/32	71/51	1	9.043 017



9.043 013

### Accessories for Extractors for specific light solvents, DURAN® tubing

Extractor heads for the extraction of liquids with specific light solvents, with insert filter (porosity: 0), made of DURAN® tubing.

Lenz

Distribution tubes with frit (porosity: 0), for specific light solvents, made of DURAN® tubing.

Type	Extractor	Condenser	PK	Cat. No.
	ml	NS		
Extractor Head	100	45/40	1	6.801 962
Extractor Head	250	45/40	1	6.258 695
Extractor Head	500	60/46	1	6.902 445
Distribution Tube	100	-	1	6.258 692
Distribution Tube	250	-	1	6.258 693
Distribution Tube	500	-	1	6.902 444



6.801 962



6.902 444

➡ Complete extraction systems - please see page 1148.



#### 1 Extractor heads for specific heavy solvents, DURAN® tubing

**NEW!**

Made of DURAN® tubing. For the extraction of liquids with specific heavy solvents, with insert filter (porosity: 0).

Lenz

Extractor	Condenser	PK	Cat. No.
ml	NS		
100	45/40	1	6.258 697
250	45/40	1	6.258 698
500	60/46	1	6.258 699



#### 2 Distribution tubes with frit, DURAN® tubing

**NEW!**

Made of DURAN® tubing. Distribution tubes with frit (porosity: 0), for specific heavy solvents.

Lenz

Extractor	PK	Cat. No.
ml		
100	1	6.235 019
250	1	6.235 065
500	1	6.258 696



#### 3 Dimroth condensers for Soxhlet

**NEW!**

Manufactured from borosilicate glass 3.3 with glass side arm. The side arms accept tubings with 8/9 mm bore size.

Isolab

For bottle	Cone	PK	Cat. No.
ml	NS		
30	29/32	1	9.012 538
70	34/35	1	9.012 539
100/250	45/40	1	6.254 108



#### 4 Condensers, ground glass joint, Dimroth, for soxhlet

Borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12591. Supplied with polypropylene side arm. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9mm bore size.

Isolab

Volume	NS	PK	Cat. No.
ml			
100 - 250	45/40	1	7.629 955



#### Condensers acc. to Dimroth, for extractors with GL threads, DURAN® tubing

Made of DURAN® tubing. For extractors and for condensing vapours. With cone. Water connection with thread GL14, with two threaded plastic olives.

Lenz

Volume	Cone	PK	Cat. No.
ml	NS		
30	29/32	1	9.043 021
70	34/35	1	9.043 022
100 - 250	45/40	1	9.043 023 5
300 - 500	60/46	1	9.043 026
1000	71/51	1	9.043 027

9.043 023



1 Dimroth condensers for extractors

**(NEW)**

For condensing vapours, with NS cone, water connection: glass olives, made of DURAN® tubing.

Lenz

Cone	Volume	PK	Cat. No.
<b>NS</b>	<b>ml</b>		
29/32	30	1	6.204 562
34/35	70	1	6.207 176
45/40	100 - 250	1	7.085 191
60/46	300 - 500	1	7.604 610
71/51	1000	1	6.266 984



2 Allihn condensers for Soxhlet

**(NEW)**

Manufactured from borosilicate glass 3.3 with glass side arm. The side arms accept tubings with 8/9 mm bore size.

Isolab

For bottle ml	Cone NS	PK	Cat. No.
30	29/32	1	9.012 540
70	34/35	1	9.012 541
100/250	45/40	1	6.254 106



Condensers, Allihn for Extractors

Made of DURAN® tubing. DIN 12581. For condensing vapours. With cone, water connection with nozzle or GL 14 thread and two threaded plastic tubing nozzles.

Lenz

Extractor ml	Cone NS	Effective length mm	Connection	PK	Cat. No.
30	29/32	160	Olive	1	6.204 890
100-250	45/40	250	Olive	1	7.200 489 <b>3</b>
30	29/32	160	GL 14	1	6.242 774
100-250	45/40	250	GL 14	1	6.224 397 <b>4</b>



7.200 489



6.224 397

Condensers in other sizes available on request.

## Distillation, synthesis/Gas wash bottles



### 1 Gas washing bottle, PP

Graduated 250ml polypropylene cylinder with a stable extended base for use in precipitating elements from gas.

Bel-Art Products

- Gas is dispersed through a removable fitting that has a coarse grade porosity, polyethylene dispersion disc
- Silicone stopper holds 6.3mm O.D. tubes for entrance and exit of gas
- 0.5 psi maximum pressure

Description	Capacity ml	Height mm	PK	Cat. No.
Gas washing bottle	250	273	1	9.110 290



### 2 Gas washing columns, FEP/PTFE

**NEW!**

BOLA

PTFE top with two threaded connections. The standard PTFE frit has a pore size of approx. 3µm and is screwed on the riser tube with an M8x1 thread. It can be exchanged with the PTFE gas distributor with fine bores which needs a lower primary pressure.

Temperature resistance: from -200°C to +250°C

- transparent
- unbreakable
- frit easily exchangeable

Type	Capacity ml	Height mm	For external tube/pipe mm	PK	Cat. No.
Column	500	400	8	1	9.110 306
Column	1000	700	8	1	9.110 308



9.110 473



9.110 472

### Gas washing bottle reservoirs, Drechsel, Borosilicate glass 3.3

In accordance with Drechsel. Ground joint 29/32. DIN 12463. Flask height 200 mm, working height 250 mm.

Rettberg

Description	NS	Capacity ml	Porosity	PK	Cat. No.
Gas washing bottle reservoirs	29/32	100	-	1	9.110 473 <b>3</b>
Gas washing bottle reservoirs	29/32	250	-	1	9.110 474
Gas washing bottle reservoirs	29/32	500	-	1	6.240 962
Gas washing bottle head, without frit disk	29/32	-	-	1	6.240 963
Gas washing bottle head, with frit disk	29/32	-	1	1	9.110 472 <b>4</b>



5

### 5 Gas wash bottle reservoirs, Drechsel, borosilicate glass 3.3

**NEW!**

Isolab

According to DIN 12596. Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. Bottle heads are supplied with or without sintered glass support (porosity 0) which enables efficient gas dispensing.

Bottle and selected head should be ordered separately.

Description	NS	Capacity ml	Porosity	PK	Cat. No.
Gas wash bottle reservoirs	29/32	125	-	1	9.140 530
Gas wash bottle reservoirs	29/32	250	-	1	9.140 531
Gas wash bottle reservoirs	29/32	500	-	1	9.140 532
Gas wash bottle head, without frit disk, with glass-olive	29/32	-	-	1	4.008 376
Gas wash bottle head, without frit disk, with PP side-olive	29/32	-	-	1	9.140 533
Gas wash bottle head, with frit disk, with glass side-olive	29/32	-	0	1	9.140 534
Gas wash bottle head, with frit disk, with PP side-olive	29/32	-	0	1	9.140 535



6

### 6 Gas wash bottle reservoirs, borosilicate glass 3.3

**NEW!**

In accordance with Drechsel.

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
100	40	200	1	9.110 190
250	54	200	1	6.237 076
500	75	200	1	9.110 191
1000	110	200	1	9.110 192

## 6. Distillation, separation, filtration

### Distillation, synthesis/Gas wash bottles

#### Gas Washing bottles acc. to Drechsel, complete DURAN® tubing

Bottle, DURAN®. Head made from DURAN® tubing, with screw connections.  
Head available with or without porosity 1 filter disc, insert height adjustable, capacity: 500ml,  
central screw cap: GL 45, lateral screw caps: GL 14.

Lenz

Description	Capacity ml	Porosity	PK	Cat. No.
Gas Washbottle without filter disc	500	-	1	6.073 489 <b>1</b>
Gas Washbottle with filter disc	500	1	1	7.635 908 <b>2</b>



6.073 489



7.635 908

#### 3 Gas washing bottles, Borosilcate glass 3.3

Head with fritted disc, standard taper joint.

Capacity ml	Porosity	NS	Int. diam. mm	Height mm	PK	Cat. No.
100	1	29/32	25	250	1	6.228 324
250	1	29/32	25	250	1	9.110 452



#### Gas washing bottle heads, DURAN® tubing

Acc. to DIN 12596. DURAN® tubing. Cone NS 29/32. With or without filter disc.

Lenz

Description	NS	Porosity	PK	Cat. No.
With filter disc, thread GL 14	29/32	1	1	6.401 362
Without filter disc, olives	29/32	-	1	9.110 380 <b>4</b>
With filter disc, olives	29/32	0	1	9.110 390 <b>5</b>
With filter disc, olives	29/32	1	1	9.110 391



9.110 380



9.110 390

#### 6 Gas distribution tubes, lateral ring or central ring, borosilicate glass 3.3

Porosity	Tube diam. mm	Diam.	Height mm	PK	Cat. No.
0	6.0	ring diam. 22mm	250	1	6.253 537
1	6.0	ring diam. 22mm	250	1	6.254 890
2	6.0	ring diam. 22mm	250	1	9.052 625
0*	9.0	ring diam. 25mm	250	1	6.253 538
1*	9.0	ring diam. 25mm	250	1	7.652 008
2*	9.0	ring diam. 25mm	250	1	7.651 831

\* central ring



#### 7 Bubble counter

DURAN®.

Height mm	PK	Cat. No.
100	1	9.014 100



## Distillation, synthesis/Tubing adapters



9.140 539

### Connectors with stopcock, borosilicate glass 3.3

**NEW!**

Isolab

Manufactured from borosilicate glass 3.3.  
Supplied with PTFE stopcock with different key bore diameters.

Socket	Cone	PK	Cat. No.
<b>NS</b>	<b>NS</b>		
14/23	14/23	1	<b>9.140 536</b>
19/26	19/26	1	<b>9.140 537</b>
24/29	24/29	1	<b>9.140 538</b>
29/32	29/32	1	<b>9.140 539 1</b>



### 2 Connectors with NS stopcock, DURAN® tubing

**NEW!**

Lenz

Made of DURAN® tubing. Connectors with NS stopcock, with solid glass plug, with NS socket and NS cone.

Socket	Cone	Bore	PK	Cat. No.
<b>NS</b>	<b>NS</b>	<b>mm</b>		
14/23	14/23	2.5	1	<b>7.622 815</b>
29/32	29/32	8.0	1	<b>7.626 118</b>



### 3 4 Expansion and reduction adapters, borosilicate glass 3.3

Isolab

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12257. They have excellent grinding to prevent airleaks. The bottom part of the ground joints are fire polished.

Socket	Cone	PK	Cat. No.
<b>NS</b>	<b>NS</b>		
14/23	19/26	1	<b>6.243 581</b>
14/23	24/29	1	<b>6.243 582</b>
14/23	29/32	1	<b>9.011 740</b>
19/26	14/23	1	<b>4.008 341</b>
19/26	24/29	1	<b>4.008 342</b>
19/26	29/32	1	<b>4.008 343</b>
19/26	34/35	1	<b>6.243 583</b>
24/29	29/32	1	<b>6.241 533</b>
24/29	34/35	1	<b>6.243 584</b>
24/29	45/40	1	<b>6.243 585</b>
29/32	14/23	1	<b>6.235 966</b>
29/32	19/26	1	<b>4.008 344</b>
29/32	24/29	1	<b>4.008 345</b>
29/32	34/35	1	<b>6.243 586</b>



9.011 755



9.011 750

### Expansion and reduction adapters, DURAN® tubing

**NEW!**

Lenz

Made of DURAN® tubing. DIN 12257 and in addition to DIN standard (\*). Reduction and expansion adapters with ground joint.

Socket	Cone	DIN	PK	Cat. No.
<b>NS</b>	<b>NS</b>			
14/23	29/32	12257	1	<b>9.011 755 5</b>
19/26	14/23	12257	1	<b>9.011 766</b>
29/32	14/23	12257	1	<b>9.011 750 6</b>
29/32	19/26	12257	1	<b>9.011 767</b>
29/32	24/29	12257	1	<b>6.073 246</b>
29/32	45/40	12257	1	<b>9.011 765</b>
34/35	29/32	12257	1	<b>6.079 832</b>
45/40	29/32	12257	1	<b>9.011 760</b>



### 7 Adapter for thermometer, borosilicate glass 3.3

Isolab

Manufactured from borosilicate glass 3.3 according to DIN 12257 standard, ideal to use for thermometers with Ø 6 - 8 mm. Screw joint provides easy depth adjustment of thermometer. Seal material: NBR

Neck thread	Cone	Adapter bore diam.	PK	Cat. No.
<b>GL</b>	<b>NS</b>	<b>mm</b>		
14	14/23	6 - 8	1	<b>4.008 360</b>
14	29/32	6 - 8	1	<b>6.244 589</b>

## 6. Distillation, separation, filtration

### Distillation, synthesis/Tubing adapters

#### 1 Threaded tube connectors, borosilicate glass 3.3

Borosilicate glass 3.3 according to DIN 12257 standard.

Isolab

Neck thread	Cone	PK	Cat. No.
GL	NS		
14	14/23	1	4.008 355
14	29/32	1	4.008 358
18	14/23	1	4.008 356
18	29/32	1	4.008 357
25	29/32	1	6.241 693

1



#### 2 Tubing adapters, , borosilicate glass 3.3

**(NEW)**

Manufactured from borosilicate glass 3.3 with two different shapes: straight or 90° angled. Tubing adapter is suitable for up to 10 mm tubings.

Isolab

Description	Socket	Diam.	PK	Cat. No.
	NS			
straight	14/23	Olive 8 mm	1	9.012 184
straight	29/32	Olive 10 mm	1	9.012 185
bend	14/32	Olive 8 mm	1	9.012 186
bend	29/32	Olive 10 mm	1	9.012 187
straight with PTFE stopcock	14/32	Olive 8 mm	1	9.012 188
straight with PTFE stopcock	29/32	Olive 10 mm	1	9.012 189
bend with PTFE stopcock	14/32	Olive 8 mm	1	9.012 190
bend with PTFE stopcock	29/32	Olive 10 mm	1	9.012 191

2



#### Cone: flexible tubing adapter

Made of DURAN® tubing. Adapter, NS cone to 10mm bore tubing connector. Straight or angled (90°). Available with or without. Solid glass plug, bore 2.5mm.

Lenz

Cone	Form	Stopcock	PK	Cat. No.
NS				
14/23	straight	with	1	9.012 316
14/23	straight	without	1	9.012 312
14/23	bent	with	1	9.012 315
14/23	bent	without	1	9.012 311
29/32	straight	with	1	9.012 319
29/32	straight	without	1	9.012 314
29/32	bent	with	1	9.012 317
29/32	bent	without	1	9.012 313

3



9.012 319

4



9.012 313

#### 5 Adapter for tubing, borosilicate glass 3.3

**(NEW)**

Manufactured from borosilicate glass 3.3 in two different forms, straight or 90° angled. Supplied with PTFE stopcock which has of 2.5mm diameter bore key. Tubing adapter is suitable for up to 10mm tubings.

Isolab

Cone	Form	Stopcock	PK	Cat. No.
NS				
14/23	straight	with	1	4.008 365
14/23	bent	with	1	4.008 367
14/23	bent	without	1	4.008 362
29/32	straight	with	1	4.008 366
29/32	straight	without	1	4.008 361
29/32	bent	with	1	4.008 369
29/32	bent form	without	1	4.008 364

5



➔ Silicone sealing rings - please see page 606.



9.209 517

**Threaded tube connectors, DURAN® tubing**

Made of DURAN® tubing. DIN 12257 and in addition to DIN standard. Double ended.  
With GL thread and NS cone.

Lenz

Neck thread	Cone	PK	Cat. No.
<b>GL</b>	<b>NS</b>		
14	14/23	1	9.209 514
14	29/32	1	9.209 517 <b>1</b>
18	14/23	1	9.209 518
18	29/32	1	9.209 529
25	14/23	1	6.300 168
25	29/32	1	9.209 559
32	24/29	1	9.209 581
32	29/32	1	9.209 582

**2 Adapters NS cone to spherical joint socket, DURAN® tubing**

Made of DURAN® tubing. Adapters from ground joint cone to spherical joint socket.

Lenz

Cone	Socket NS	PK	Cat. No.
<b>NS</b>			
14/23	19	1	9.011 768
29/32	19	1	9.011 769
29/32	29	1	6.900 648



9.011 771

**Adapters NS socket to spherical joint ball, DURAN® tubing**

Made of DURAN® tubing. Adapters from spherical joint ball to ground joint socket.

Lenz

Socket	Socket/Ball	PK	Cat. No.
<b>NS</b>			
14/23	19	1	9.011 770
29/32	29	1	9.011 771 <b>3</b>

**4 Screw connector caps, PBT**

Red. PBT. With central hole (diameter outlined below). Temperature resistance to max. 180°C.

DURAN Group

Neck thread	Bore	PK	Cat. No.
<b>GL</b>	<b>mm</b>		
14	9.5	1	9.209 114
18	11.0	1	9.209 118
25	15.0	1	9.209 125
32	20.0	1	9.209 132
45	34.0	1	9.209 135

**5 Screwthread couplings, PBT**

DIN screwthread. For flexible connection of two glass screwthreads. With integral PTFE-faced silicone (VMQ) seals. Temperature resistant to max. 180°C.

DURAN Group

Neck thread	PK	Cat. No.
<b>GL</b>		
14	1	9.209 004
18	1	9.209 005

**6 Silicone cap wads/septa, VMQ**

For GL-screwthread caps. Overall diameter and wad thickness as outlined below.  
Thermal resistance: 130°C (steam)/200°C (heat). Autoclavable.

DURAN Group

For thread size	Diam.	Thickness	PK	Cat. No.
<b>GL</b>	<b>mm</b>	<b>mm</b>		
14	12	2	1	9.209 414
18	16	2	1	9.209 418
25	22	2	1	9.209 425
32	29	2	1	9.209 432
45	42	3	1	9.209 435



## 6. Distillation, separation, filtration

### Distillation, synthesis/Tubing adapters

#### 1 Silicone sealing rings, VMQ

With vulcanized PTFE sleeve. For screwthread caps.  
Thermal resistance: 130°C (steam), 200°C (heat). Autoclavable.

DURAN Group

For thread size GL	Int. diam. mm	Ext. diam. mm	For tubes diam. mm	PK	Cat. No.
14	6	12	5.5 to 6.5	1	9.209 146
18	6	16	5.5 to 6.5	1	9.209 186
18	8	16	7.5 to 9.0	1	9.209 188
18	10	16	9.0 to 11.0	1	9.209 190
25	8	22	7.5 to 9.0	1	9.209 258
25	10	22	9.0 to 11.0	1	9.209 260
25	12	22	11.0 to 13.0	1	9.209 262
32	10	29	9.0 to 11.0	1	9.209 320
32	12	29	11.0 to 13.0	1	9.209 322
32	14	29	13.0 to 15.0	1	9.209 324
32	16	29	15.0 to 17.0	1	9.209 326
32	18	29	17.0 to 19.0	1	9.209 327
45	26	42	25.0 to 27.0	1	9.209 329
45	32	42	31.0 to 33.0	1	9.209 331



#### 2 Plastic ferrule, angled, PP

PP. For screw connector caps GL 14. With silicone seal (VMQ).  
Temperature resistant up to max. +140°C. Autoclavable.

DURAN Group

Diam. mm	Neck diam. mm	PK	Cat. No.
8.6	4	1	9.051 308



#### 3 GL screwthread ferrules

Fluoroplastics, for tubing connection. Straight and curved models available, screw connector caps made of PPS reinforced with glass fibre (max. +250°C), ferrules made of PFA, with flexible PFA sealing rim and FPM O-ring. When in use, the contents only comes into contact with PFA (or PTFE - GL25 and GL32).

BOLA

Type	Neck thread GL	Ext. diam. mm	Int. diam. mm	PK	Cat. No.
Straight 35 mm	14	8.7	6.00	1	9.051 320
Straight 39 mm	18	10.5	7.00	1	9.051 321
Angled 40 mm	14	8.7	6.00	1	9.051 324
Angled 54 mm	18	10.5	7.00	1	9.051 325



## 6. Distillation, separation, filtration

### Distillation, synthesis/standard ground stoppers

GENERAL CATALOGUE EDITION 19



#### 1 NS stoppers, PP

Isolab

NS	PK	Cat. No.
10/19	1	4.008 495
12/21	1	4.008 496
14/23	1	4.008 497
19/26	1	4.008 498
24/29	1	4.008 499
29/32	1	4.008 500



#### 2 Stoppers, hollow, PE

Fits standard conical joints. Supplied singly.

NS	PK	Cat. No.
7/16	1	9.230 107
10/19	1	9.230 110
12/21	1	9.230 112
14/23	1	9.230 114
19/26	1	9.230 119
24/29	1	9.230 124
29/32	1	9.230 129
45/40	1	9.230 145
60/46	1	9.230 160



#### 3 Conical stoppers, PE

Polyethylene. Stoppers manufactured to DIN standard 12242 ensuring an effective seal, even on non-standard surfaces.

NS	Bottom diam. mm	Colour	PK	Cat. No.
7/16	5.9	violet	1	9.230 161
10/19	8.1	blue	1	9.230 162
12/21	10.4	green	1	9.230 163
14/23	12.2	brown	1	9.230 164
19/26	16.4	yellow	1	9.230 165
24/29	21.1	red	1	9.230 166
29/32	25.8	black	1	9.230 167
34/35	30.9	white	1	9.230 168



#### 4 NS-Glass stoppers, hollow borosilicate glass 3.3

Isolab

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12252.

Lower closed end of stopper features a "drip-tip" to ensure adhered liquid is returned to the flask.

Hexagonal flat head prevents the stopper from rolling and allows stopper to be stood on end preventing contamination of the ground surface.

NS	Description	PK	Cat. No.
10/19	clear	1	7.900 483
12/21	clear	1	6.242 396
14/23	clear	1	9.229 990
19/26	clear	1	9.229 991
24/29	clear	1	6.240 333
29/32	clear	1	9.229 992
34/35	clear	1	6.240 060
10/19	amber	1	7.900 484
12/21	amber	1	6.258 416
14/23	amber	1	7.900 486
19/26	amber	1	7.970 573
24/29	amber	1	6.258 415
29/32	amber	1	7.629 440
34/35	amber	1	6.258 417

## 6. Distillation, separation, filtration

### Distillation, synthesis/standard ground stoppers-NS joints accessories

#### 1 2 NS-Glass stoppers, DURAN®, SWB and Borosilicate glass

DIN 12252. Hollow stoppers, hexagonal plate, pointed or flat bottom and stoppers, octagonal plate, solid or semi-hollow.



NS	Material	Stopper NS	Form	Figure	PK	Cat. No.
7/16	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 002
10/19	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 003
12/21	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 004
14/23	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 006
19/26	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 007
29/32	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 009
45/40	Borosilicate glass 3.3	hollow	hexagonal	a	1	9.230 012
10/19	DURAN®	solid	octagonal	b	1	9.230 053
12/21	DURAN®	solid	octagonal	b	1	9.230 054
14/23	SBW	solid	octagonal	b	1	9.230 056
19/26	SBW	solid	octagonal	b	1	9.230 057
24/29	SBW	solid	octagonal	b	1	9.230 058
29/32	SBW	semi solid	octagonal	b	1	9.230 059
34/35	DURAN®	semi solid	octagonal	b	1	9.230 061
45/40	DURAN®	semi solid	octagonal	b	1	9.230 062

#### 3 Clips for joints, POM

Manufactured from POM and has excellent chemical resistance as well as a very good mechanical strength. They are perfect tools to join two ground joints.

*Isolab*

NS	Colour	PK	Cat. No.
10/19	black	1	4.008 347
12/21	purple	1	4.008 348
14/23	yellow	1	4.008 349
19/26	blue	1	4.008 350
24/29	green	1	4.008 351
29/32	red	1	4.008 352
34/35	orange	1	4.008 353
45/40	brown	1	4.008 354



#### 4 Conical joint clips for joints, POM, connections, plastic

POM. Melting point 175°C. For conical ground joints. Excellent chemical resistance. Rigid.

NS	Colour	PK	Cat. No.
10/19	green	1	9.011 773
12/21	violet	1	9.011 774
14/23	yellow	1	9.011 775
19/26	blue	1	9.011 776
24/29	green	1	9.011 777
29/32	red	1	9.011 778
34/35	orange	1	9.011 779
40/42	yellow	1	9.011 780
45/40	brown	1	9.011 781



#### 5 Spherical joint clips, plastic

POM. Melting point 175°C. For spherical ground joints. Excellent chemical resistance. Rigid.

NS	PK	Cat. No.
13	1	9.011 793
19	1	9.011 794
29	1	9.011 795
35	1	9.011 796





### 1 Ground joint clips for sleeve connections, wire, Chrome-nickel steel

Chrome-nickel steel.

NS	PK	Cat. No.
10/19	1	9.011 703
12/21	1	9.011 704
14/23	1	9.011 705
19/26	1	9.011 706
24/29	1	9.011 707
29/32	1	9.011 708
45/40	1	9.011 710



### 2 3 Clipox® Clips for NS ground glass joints



Clipox

Clipox® Clips are safe, universal clips for NS conical ground glass joints.

Available to secure NS conical ground glass joints including stopcocks, vacuum-stopcocks and reagent bottles with glass stoppers.

Clipox® simplifies the daily laboratory work and increases the safety of glassware.

- Easy to mount and to remove due to two-sided handles
- To be used with stand clamps
- Secures horizontal and vertical in case of pressure overload
- Longevity of suspension and shape due to spring steel wire
- Outstanding thermal, chemical and acid resistance
- Material: high grade stainless steel, V4A (1.4568)
- Made in Germany, production certified according to ISO 9001

Pack of 5 pieces.



Joint size	PK	Cat. No.
NS		
10	5	9.011 400
12	5	9.011 401
14	5	9.011 402
19	5	9.011 403
24	5	9.011 404
29	5	9.011 405
34	5	9.011 406
40	5	9.011 407
45	5	9.011 408
60	5	9.011 409



### 4 Joint clips for conical joint sleeve connections

Chrome-nickel steel. For tapered ground joints as outlined below. With, or without, locking screw.

NS	Type	PK	Cat. No.
14/23	with locking screw	1	9.011 675
19/26	with locking screw	1	9.011 676
24/29	with locking screw	1	9.011 677
29/32	with locking screw	1	9.011 678
45/40	with locking screw	1	9.011 680
14/23	without locking screw	1	9.011 685
19/26	without locking screw	1	9.011 686
24/29	without locking screw	1	9.011 687
29/32	without locking screw	1	9.011 688
45/40	without locking screw	1	9.011 690



### 5 PTFE sealing rings for jointed glassware

An effective alternative to common PTFE joint sleeves and PTFE stoppers.

- Air leakage <10<sup>-8</sup> to 10<sup>-9</sup> mBar l/s (vacuum and pressure).
- Solvent leakage from containers < 0.1 to 0.03mg/day.
- Temperature range: -196 to 300°C

NS	PK	Cat. No.
10	50	9.011 663
12	50	7.622 596
14	50	9.011 664
19	50	9.011 665
24	50	9.011 666
29	50	9.011 667
34	50	7.700 004
45	50	9.011 668

## 6. Distillation, separation, filtration

### Distillation, synthesis/NS joints accessories

#### 1 Sleeves, PTFE, disposable

Seals without grease - no grease residues are left in the analysis. Excellent chemical resistance. Can be used in temperatures from -200 to +260°C. Wall thickness only 0.05mm. Wide range of applications, also suitable for vacuums down to 0.1mbar, e.g. for rotary evaporators.

BRAND

NS	PK	Cat. No.
7/16	1	9.011 316
10/19	1	9.011 317
12/21	1	9.011 318
14/23	1	9.011 319
19/26	1	9.011 320
24/29	1	9.011 321
29/32	1	9.011 322
34/35	1	9.011 323
40/38	1	9.011 330
45/40	1	9.011 324
50/42	1	9.011 325
55/44	1	9.011 326
60/46	1	9.011 327



#### 2 Sleeves with ribs, PTFE

For use with ground glass joints. Suitable for vacuums up to 0.1mbar. Reusable and long lasting. The sealing ribs grip on the inside wall of the glass socket, sealing without the need for grease and enabling the cone to be freed easily when required.

BOLA

NS	PK	Cat. No.
12/21	1	9.011 653
14/23	1	9.011 655
19/26	1	9.011 656
24/29	1	9.011 657
29/32	1	9.011 658
45/40	1	9.011 660



#### 3 Sleeves, cone joint, PTFE

With knurled gripping ring at the top of the cone for easy removal. For gas, liquid and vacuum-tight cone joint connections with sizes as outlined below. Reusable. With reinforced external ribs for a high-vacuum tight seal (leakage rate:  $< 1 \times 10^{-4}$  mbar x l x s<sup>-1</sup>). No joint sealant or grease required.

BOLA

NS	PK	Cat. No.
14/23	1	9.011 642
19/26	1	9.011 643
24/29	1	9.011 644
29/32	1	9.011 645
45/40	1	9.011 647



#### 4 Sealing tape, PTFE

For covering areas which require protection against chemicals of all types at temperatures of -150 to +260°C. Non-swelling. Easy loosening of seams even after continuous operation. Supplied in rolls as outlined below.

Width	Length	Wall thickness	PK	Cat. No.
mm	cm	mm		
12.8	670	0.1	1	9.404 952
24.0	670	0.1	1	9.404 955



#### 5 Baysilone® silicone high vacuum grease

For use up to  $10^{-6}$  mbar. -50 to +200°C. Supplied in 35g tube.

Type	PK	Cat. No.
Low viscosity	1	9.116 902
Medium viscosity	1	9.116 903
High viscosity	1	9.116 904





## 6. Distillation, separation, filtration

GENERAL CATALOGUE EDITION 19

### Distillation, synthesis/NS joints accessories-Ground joints, attachable



#### 1 BUDDE - joint grease

For all glass joints. Transparent, vacuum tight, water washable and water soluble. Maintains practically the consistency between -30°C and +200°C, non-solidifying. Compatible with most elastomers. Biodegradable. Tube of 80g.

Buddeberg

Weight g	PK	Cat. No.
80	1	9.116 950



#### 2 Silicone high vacuum grease

Silicone high vacuum grease are used for ground joints and taps at low ultimate pressure. Like vacuum grease LOSOID is very stable during temperature changes, though its lubricating properties at high and low temperature are not as good. At temperatures above 200°C the silicone grease continue to be polymerized and begins to outgas. 100g tube.

Type	PK	Cat. No.
Silicone high vacuum grease	1	9.116 901



#### 3 Silicone high vacuum grease

For use up to 10<sup>-6</sup> mbar. Temperature range from -40 to +150°C. 100g tube.

Type	PK	Cat. No.
Silicone high vacuum grease	1	9.116 911

#### Silicone grease OKS 1112



Kahmann & Ellerbrock

Description	PK	Cat. No.
Silicone grease, 100g tube	1	9.116 909



#### 4 Joint grease, K.W.S

Without silicone. Designed as vacuum and high vacuum grease. No silicone derivatives, polymerisation or gumming. Excellent adhesion and viscosity. Acid/alkaline resistant. Locked joints can be loosened by brief, gentle heating. Can be used to make temporary glassware repairs. Biodegradable. Non-toxic in normal use.

Working temperature range: -40 to +200°C  
Vapour pressure: 0.00001 mbar.

Capacity ml	PK	Cat. No.
30	1	9.116 924

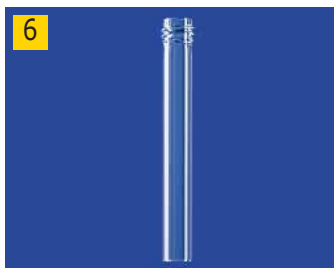


#### 5 Rotating joint grease, silicone-free, Alsirol

Silicone-free stopcock grease. No silicone derivatives, polymerisation or gumming. Excellent adhesion and viscosity. Stable grease film enables safe, long term use. Low heat-up occurs during rotation even if operation is continuous. When sealing glassware systems with glass and metal stirrers and shafts Alsirol protects rotating, precision-ground sockets and stirring shafts against glass abrasion. Also suitable for lubricating rotating metal and glass components. Acid and alkali resistant. For use under vacuum and high vacuum. Biodegradable. Non-toxic in normal use.

Working temperature range: -40 to +200°C  
Vapour pressure: 0.00001 mbar

Capacity ml	PK	Cat. No.
50	1	9.116 925



9.209 714

#### Screwthread tubes for glassblowers, DURAN®

Acc. to DIN 12216 and in addition to standard (\*), with DIN thread (GL), material: DURAN®.

Lenz

Neck thread GL	Diam. mm	Length mm	PK	Cat. No.
14	12	100	1	9.209 714 6
18	16	100	1	9.209 718
25	22	100	1	9.209 725
32	28	140	1	9.209 732
45	40	180*	1	9.209 735



## 6. Distillation, separation, filtration

### Distillation, synthesis/Ground joints, attachable-Stopcocks and Valves

#### Spherical ground glass joints, Socket and ball members, inch range, DURAN® tubing

Made of DURAN® tubing. DIN 12264 and in addition to DIN standard (\*).  
With ground glass ball (male) and socket (female) joints. Socket joints have a beaded reinforcement rim.

Lenz

Type	Socket/Ball	Tube diam. mm	Overall length mm	PK	Cat. No.
Socket	S 13/5	8.0	100	1	9.011 603
Socket	S 19	13.0	120	1	9.011 605
Socket	S 29	19.0	120	1	9.011 609
Socket	S 35*	28.0	120	1	9.011 613 <sup>1</sup>
Ball	S 13/5	8.0	100	1	9.011 623
Ball	S 19	13.0	120	1	9.011 625
Ball	S 29	19.0	120	1	9.011 629
Ball	S 35*	28.0	120	1	9.011 630 <sup>2</sup>



9.011 613

9.011 630

#### 6 Sockets/Cones with NS joint, DURAN® tubing

**(NEW!)**

Made of DURAN® tubing. DIN 12249 and in addition to DIN standard (\*). Annealed edges. Joint rims slightly rounded.  
Other sizes on request.

Lenz

Description	NS	Ext. diam. mm	Length mm	PK	Cat. No.
Socket	5/13	8	120	1	9.011 521
Socket	14/23	17	130	1	9.011 525
Socket	19/26	22	130	1	9.011 526
Socket	19/38*	22	120	1	7.606 907
Socket	29/32*	32	210	1	6.303 190
Socket	29/32	33	130	1	9.011 528 <sup>4</sup>
Socket	40/38*	44	130	1	6.202 446
Socket	45/40*	48	280	1	6.303 189
Socket	45/40	50	145	1	9.011 530
Socket	71/51	75	165	1	9.011 532
Socket	85/55	90	185	1	9.011 533
Cone	5/20*	4	115	1	6.070 542
Cone	10/30*	8	115	1	6.222 104
Cone	12/21	11	130	1	9.011 504
Cone	12/21	11	130	1	6.072 920
Cone	14/35*	13	140	1	6.900 898
Cone	14/23	13	130	1	9.011 505
Cone	19/26*	17	120	1	6.072 150
Cone	19/38*	17	140	1	7.606 908
Cone	19/26	17	130	1	9.011 506
Cone	29/32	26	130	1	9.011 508 <sup>3</sup>
Cone	29/42*	26	140	1	6.203 538
Cone	34/45*	30	140	1	6.401 432
Cone	40/38*	36	145	1	6.202 386
Cone	45/40	40	145	1	9.011 510
Cone	50/42*	46	145	1	7.630 287
Cone	55/44*	50	145	1	7.630 288
Cone	60/46*	54	160	1	6.073 068
Cone with outlet	14/23	13	130	1	9.011 545
Cone with outlet	29/32	26	130	1	9.011 548 <sup>5</sup>

3



9.011 508

4



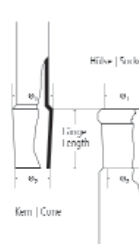
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9.011 548

6



#### 3-way stopcocks, T-bore, borosilicate glass 3.3

Acc. to DIN 12554 and in addition to DIN standard, T-bore, with solid glass plug or PTFE plug and screw thread retaining device. Material: borosilicate glass 3.3, leakage rate to DIN 12540-1.

Lenz

Description	Stopcock type	Bore mm	PK	Cat. No.
Solid Glass Key	14,5	1.5	1	9.116 011 <sup>7</sup>
Solid Glass Key	14,5	2.5	1	9.116 012
Solid Glass Key	18,8	2.5	1	9.116 013
Solid Glass Key	18,8	4.0	1	9.116 014
Solid Glass Key*	24,0	4.0	1	9.116 015
Solid Glass Key*	29,2	6.0	1	9.116 017

\* with rubber ring retaining device



9.116 011

## Distillation, synthesis/Stopcocks and Valves



9.115 611

### Stopcocks, straight bore with solid glass plug, borosilicate glass 3.3



DIN 12541-1 in addition to DIN standard. With solid glass plug and retaining device.  
Straight bore. Leakage rate acc. to DIN 12540-1.

Lenz

Description	NS	Bore mm	DIN	Material	PK	Cat. No.
With solid glass key	12.5	1.5	12541-1		1	9.115 611 1
With solid glass key	12.5	2.5			1	9.115 642
With solid glass key	14.5	2.5	12541-1		1	6.079 648
With solid glass key	14.5	4.0			1	9.115 614
With solid glass key	18.8	4.0	12541-1		1	9.115 644
With solid glass key	18.8	6.0			1	9.115 615
With solid glass key	24*	8.0			1	9.115 618
Spare key, solid glass	12.5	1.5		SBW	1	7.018 947
Spare key, solid glass	12.5	2.5		SBW	1	7.018 936
Spare key, solid glass	14.5	2.5		SBW	1	7.018 948
Spare key, solid glass	14.5	4.0		SBW	1	6.093 232
Spare key, solid glass	24	8.0		DURAN®	1	7.657 852
Spare key, solid glass	29.2	10.0			1	6.266 986

\*with rubber retaining device



### 2 Vacuum stopcocks, glass, Vendura-Nova

Vendura-Nova DURAN®. With PP safety device. Adjustable seal. Comprises of glass stopcock body, PTFE needle with sealing ring and FKM O-rings. Fine control gives precise flow metering.

DURAN Group

Available in straight or 90° angle patterns.

Leak rate: <1 x 10<sup>-6</sup> mbar x l/s

Temperature resistant to

with safety device: 140°C

without safety device: 180°C

Type	Tube diam. mm	Flow rate ml / min.	PK	Cat. No.
straight	9.0	0 to 2.5	1	9.117 002
straight	10.0	0 to 4.0	1	9.117 003
straight	10.0	0 to 6.0	1	9.117 004
90° angle	9.0	0 to 2.5	1	9.117 012
90° angle	10.0	0 to 4.0	1	9.117 013
90° angle	10.0	0 to 6.0	1	9.117 014



### 3 One-way stopcocks, straight bore, with PTFE plug, borosilicate glass 3.3



Acc. to DIN 12541-1 and in addition to DIN standard, with PTFE plug and screwthread retaining device, one straight bore, material: borosilicate glass 3.3, leakage rate acc. to DIN 12540-1.

Lenz

Description	NS	Bore mm	DIN	Material	PK	Cat. No.
With PTFE key	12.5	1.5	DIN 12541-1		1	9.115 631
With PTFE key	12.5	2.5			1	6.070 033
With PTFE key	14.5	2.5	DIN 12541-1		1	9.115 648
With PTFE key	14.5	4.0			1	9.115 634
With PTFE key	18.8	4.0	DIN 12541-1		1	9.115 635
With PTFE key	18.8	6.0			1	6.222 868
With PTFE key	21.5	6.0	DIN 12541-1		1	9.115 637
With PTFE key	24	8.0			1	9.115 638
With PTFE key	29.2	10.0	DIN 12541-1		1	9.115 639
With PTFE key	12.5*	1.5	DIN 12541-1		1	9.115 632
With PTFE key	14.5*	2.5	DIN 12541-1		1	9.115 633
Spare key	12.5	1.5		PTFE	1	7.072 146
Spare key	12.5	2.5		PTFE	1	6.306 550
Spare key	14.5	2.5		PTFE	1	6.801 361
Spare key	14.5	4.0		PTFE	1	6.306 551
Spare key	18.8	4.0		PTFE	1	7.018 955
Spare key	18.8	6.0		PTFE	1	7.630 235
Spare key	21.5	6.0		PTFE	1	7.603 864
Spare key	24	8.0		PTFE	1	7.657 006
Spare key	29.2	10.0		PTFE	1	6.266 985

\* with capillary side arms.

### Rotary Evaporator Rotavapor® R-300

The rotary evaporator R-300 meets the highest needs in convenience, productivity and versatility. The rotation speed, heating temperature and lift position is shown digitally on the heating bath.

BÜCHI

#### Lift System

Option 1: Manual lift

Option 2: Electronic lift

#### Heating Bath

**Option 1: B-301.** Temperature range of 20°C to 95°C (water). Max. evaporating flasks size: 1000mL (3kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature. Fast heat up time.

**Option 2: B-305.** Temperature range of 20°C to 220°C. Max. evaporating flasks size: 5000mL (3kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature.

#### Standard Joint

SJ 29/32

#### Glass Assembly

**Option V: Vertical condenser (V):** Vertical condenser used along with a recirculating chiller or tap water.

**Option C: Cold trap (C):** Cold trap used for low boiling solvents along with e.g. dry ice for cooling.

Other glass assembly configuration on request

#### Protective Coating

Option: Transparent PLASTIC+GLAS (P+G) safety coating. Protect against mechanical damage. In the event of breakage there is no loss of sample.

### 1 Rotavapor® R-300 with heating bath B-301

BÜCHI

Type	Lift	Capacitor	Coating	PK	Cat. No.
R-300	manually	vertical	no	1	6.267 887
R-300	electric	vertical	yes	1	6.267 888
R-300	electric	cold trap	yes	1	6.267 889

### 2 Rotavapor® R-300 with heating bath B-305

BÜCHI

Type	Lift	Capacitor	Coating	PK	Cat. No.
R-300	manually	vertical	no	1	6.267 890
R-300	electric	vertical	yes	1	6.267 891
R-300	electric	cold trap	yes	1	6.267 892



### Rotary Evaporator Rotavapor® R-300 Configuration

Every Rotary Evaporator Rotavapor® R-300 will be delivered with a transparent **PLASTIC+GLAS (P+G) safety coating, a vertical glass assembly (V), NS29/32, and a vacuum pump V-300. Interface, heating bath and recirculating chiller could be chosen from below options.**

BÜCHI

#### Interface

**Option S:** I-300, with VacuBox, Woulff bottle. Operation by navigation knob and function keys. Wide range of operating modes (manual, timer, solvent library, automatic distillation, drying). Compatible with BÜCHI Rotavapor App for mobile push notifications and remote monitoring.

**Option P:** I-300 Pro, with VacuBox, Woulff bottle. Operation by touch screen or navigation knob. Wide range of operating modes (methods, manual, timer, solvent library, automatic distillation, drying). Charting and recording possibilities (on SD card). Compatible with BÜCHI Rotavapor App for mobile push notifications and remote monitoring (including charting).

#### Vacuum pump

V-300 (1.8m³/h, 5mbar) is a chemically resistant PTFE diaphragm vacuum pump with transparent front panel to observe the membrane for highest distillation efficiency. Final vacuum: 5 mbar (±2 mbar). Suction capacity: 1.8 m³/h. Speed-controlled operation.

#### Recirculating chiller F-305

Ecological recirculating chiller. Cooling capacity: 550 W at 15°C. Temperature range: - 10°C to +25°C. Rotation knob for set temperature in steps of 0.1°C. Lock of cooling temperature. In combination with Interfaces I-300/I-300 Pro: Temperature setting/monitoring via interface, energy-saving eco-mode and automatic ON/OFF.

#### Heating Bath

**Option 1: B-301.** Temperature range of 20°C to 95°C (water). Max. evaporating flasks size: 1000 mL (3 kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature. Fast heat up time.

**Option 2: B-305.** Temperature range of 20°C to 220°C. Max. evaporating flasks size: 5000 mL (3 kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature.

### 1 Rotavapor® R-300 System with Interface I-300 without recirculating chiller F-305



BÜCHI

Type	Lift	Capacitor	Coating	Heating bath	PK	Cat. No.
R-300S	manually	vertical	yes	B-301	1	6.267 893
R-300S	electric	vertical	yes	B-301	1	6.267 894
R-300S	electric	vertical	yes	B-305	1	6.267 895

### 2 Rotavapor® R-300 System with Interface I-300 Pro without recirculating chiller F-305



BÜCHI

Type	Lift	Capacitor	Coating	Heating bath	PK	Cat. No.
R-300P	electric	vertical	yes	B-301	1	6.267 896
R-300P	electric	vertical	yes	B-305	1	6.267 897



## 6. Distillation, separation, filtration

### Rotary evaporators/Instruments

#### 1 Rotavapor® R-300 System with Interface I-300 and recirculating chiller F-305

**NEW!**

BÜCHI

Type	Lift	Capacitor	Coating	Heating bath	PK	Cat. No.
R-300S	electric	vertical	yes	B-301	1	6.267 898
R-300S	electric	vertical	yes	B-305	1	6.267 899

1



#### 2 Rotavapor® R-300 System with Interface I-300 Pro and recirculating chiller F-305

**NEW!**

BÜCHI

Type	Lift	Capacitor	Coating	Heating bath	PK	Cat. No.
R-300P	electric	vertical	yes	B-301	1	6.268 000
R-300P	electric	vertical	yes	B-305	1	6.268 001

2



#### Rotary Evaporator Rotavapor® R-100

The Rotavapor® R-100 is a high-quality rotary evaporator to meet the essential needs in classical laboratory applications. It is capable of a manually adjusting the rotation speed from 20 to 280 rpm and is equipped with an action jack lift for manual lifting of the evaporating flask.

BÜCHI

##### Heating Bath B-100

Temperature range of 20°C to 95°C. Max. evaporating flask size: 4000mL (3kg). Digital display of set and actual temperature (alternating).

##### Standard Joint

SJ 29/32

##### Glass Assembly

**Option V: Vertical condenser (V):** Vertical condenser used along with a recirculating chiller or tap water.

**Option C: Cold trap (C):** Cold trap used for low boiling solvents along with e.g. dry ice for cooling.

##### Protective Coating

Option 1: Without coating

Option 2: Transparent PLASTIC+GLAS (P+G) safety coating. Protect against mechanical damage. In the event of breakage there is no loss of sample.

#### 3 Rotavapor® R-100 with vertical glass assembly

**NEW!**

Heating bath B-100, manual lift.

BÜCHI

Type	Capacitor	Coating	PK	Cat. No.
R-100	vertical	no	1	6.268 002
R-100	vertical	yes	1	6.268 003

3





### 1 Rotavapor® R-100 with cold trap



Heating bath B-100, manual lift.

BÜCHI

Type	Capacitor	Coating	PK	Cat. No.
R-100	cold trap	no	1	6.268 004
R-100	cold trap	yes	1	6.268 005

### Rotary evaporator System Rotavapor® R-100

The Rotavapor® R-100 can be completed to a rotary evaporator system including a vacuum pump, interface and recirculating chiller. The Vacuum Pump V-100 and Recirculating Chiller F-105 are ON/OFF regulated by the Interface I-100. Heating bath, glass assembly and coating are similar to the Rotavapor® R-100.

BÜCHI

#### Interface

I-100, with Woulff bottle. Operation by function keys. Two operating modes (manual, timer), display of set and actual pressure. ON/OFF regulation of Vacuum Pump V-100 and Recirculating Chiller F-105.

#### Vacuum Pump

V-100 is a chemically resistant PTFE diaphragm vacuum pump. Final vacuum: 10 mbar ( $\pm 2$  mbar). Suction capacity: 1.5 m<sup>3</sup>/h. ON/OFF regulation.

#### Recirculating Chiller

**Option: F-100.** Ecological recirculating chiller. Cooling capacity: 300 W at 10°C. Fix temperature: 10°C.

**Option: F-105.** Ecological recirculating chiller. Cooling capacity: 500 W at 15°C. Temperature range: -10°C to +25°C. Rotation knob for set temperature in steps of 1°C. In combination with Interface I-100: ON/OFF regulation.

### 2 Rotavapor® R-100 system configuration



Heating bath B-100, manual lift, Interface I-100, vacuum pump V-100.

BÜCHI

Type	Capacitor	Coating	PK	Cat. No.
R-100	vertical	no	1	6.268 006
R-100	vertical	yes	1	6.268 007
R-100	cold trap	no	1	6.268 008
R-100	cold trap	yes	1	6.268 009

### 3 Rotavapor® R-100 system configuration with recirculating chiller F-105



Heating bath B-100, manual lift, Interface I-100, vacuum pump V-100, recirculating chiller F-105.

BÜCHI

Type	Capacitor	Coating	PK	Cat. No.
R-100	vertical	no	1	6.268 010
R-100	vertical	yes	1	6.268 011

2



3





### 1 Industrial Rotavapor® R-220 SE



1

The Rotavapor® R-220 SE is designed for distillation, concentration, drying or solvent recycling in the industrial environment. Key benefits are safety, robustness and easy handling. The integrated vacuum controller and the large display allow for convenient control and supervision, as well as reproduction of the process.

Different glass assemblies are available to cover different needs. A wide range of accessories enables different grades of automation.

**R-220 SE R:** 1 x 10 L receiving flask, 20 L evaporating flask and Vacuum Controller V-850.

**R-220 SE DW:** For foaming or low boiling products, two receiving flasks, 20 L evaporating flask and Vacuum Controller V-850.

#### Specification

Glass assemblies:	7 configurations
Evaporating flask:	6 L, 10 L or 20 L
Heating:	3.6 kW heating capacity for up to 180°C
Bath lift:	electronically
Rotation:	electronically, 5-150 rpm
Protective coating:	Safety PLASTIC+GLAS coating
Voltage:	200 V, 230 V (single phase) or 400 V (3 phase)



Type	Description	PK	Cat. No.
R-220 SE R, 20L, V-850, 230V	With reflux assembly	1	6.267 853
R-220 SE DW, 20L, V-850, 230V	With descending assembly	1	6.267 854
R-220 SE R, 20L, V-850, 400V	With reflux assembly	1	6.267 855
R-220 SE DW, 20L, V-850, 400V	With descending assembly	1	6.267 856

### 2 Rotary Evaporator RV 8

The IKA Rotary Evaporator range gets a new family member - the RV 8. This distilling system completes the existing series by adding a functional basic model. The manual lift, with ambidextrous design, allows for precise positioning of the glassware. Digital displays for rotation speed and heating bath temperature allow for optimal control of all distilling processes. New clamp mechanism to simplify the changing of evaporation flasks.

IKA

- Manual lift with integrated safety "lift-out-function"
- Water/oil heating bath with integrated ergonomic carrying handles
- Key-button with locking function for the heating bath temperature
- Adjustable immersion angle
- Digital displays for rotation speed and heating bath temperature
- Single-hand operation; ambidextrous design
- Speed range 5 - 300rpm
- Additional user safety through reduced 24 V power requirements within the unit
- Compatible with the complete range of IKA RV 10 glassware
- New clamp mechanism

#### Specifications

##### Drive

Motor rating input	50W
Speed:	5 to 300rpm
Speed display:	digital
Adjustable head angle:	0 to 45°
Stroke displacement:	130mm, manual

##### Heating bath

Bath volume:	3l
Temperature range:	RT to +180°C
Heating power:	1300W

##### General data

Dimensions (WxDxH):	510 x 345 x 490mm
Protection class according to DIN EN 60529:	IP 20
Power supply	220-240V, 50/60Hz

2



Type	Description	PK	Cat. No.
RV 8 Flex	with heating bath HB 10 and Woulff bottle	1	9.813 001
RV 8 V	with heating bath HB 10 and vertical glassware, RV 10.1	1	9.813 002
RV 8 V-C	with heating bath HB 10 and vertical glassware, coated RV 10.10	1	9.813 003

#### Rotary evaporator RV 10 digital



The RV 10 digital is a robust and reliable lab companion. Its optimized bath volume allows for fast heat-up times. The condenser unit has specially designed glass tubes that utilize the 1500 cm<sup>2</sup> surface extremely efficiently. That's why the RV 10 digital delivers reliable and reproducible process results usually seen on much more costly systems. Additional features such as smooth start, left-right interval or timer function capability support the users in their daily lab work. Another important aspect of the RV 10 digital is the sophisticated safety features. The motorized lift has an automated lift-out function in case of power outage to prevent superheating of the solvent. Safety temperature circuits can be set individually. Dry-run protection, adjustable lower end stop and lock function of bath setting complete the line of safety features. Furthermore, IKA offers a choice of coated glassware for increased safety needs. The RV 10 digital has a RS232 interface which allows for remote control via IKAs "labworldsoft". The heating bath is controlled via the IR interface from the main unit.

- Universal (water/oil) heating bath
- Vertical Glassware as standard
- Motorized lift with "safety-stop" function
- Optimized heating bath volume for fast heat-up
- Highly efficient 1500 cm<sup>2</sup> condenser unit
- Rugged design
- Ergonomically placed handles on heating bath
- Smooth start
- Left-right interval
- Timer function
- Dry-run protection
- Safety temperature circuits
- Lower-end stop
- Choice of coated glassware
- Push-off mechanism to loosen tight fitted glassware
- Easy and safe operation due to ergonomically designed user interface
- RS-232 interface for remote control

#### Specifications

Drive:	
Motor rating input:	50W
Speed range:	20 to 280 rpm
Speed display:	digital
Head angle adjustable:	0 to 45°
Stroke displacement:	140mm, motorised
Setting of lower end stop:	60mm, contact-free
Heating bath:	
Temperature range:	Ambient up to 180°C
Heating power:	1.300W
Protection class acc. to DIN EN 60529:	IP 20
Power supply:	220-240V/50/60Hz



9.813 012

Type	Description	PK	Cat. No.
RV 10 digital V	with heating bath HB 10, vertical glassware RV 10.1, vapor tube RV 10.70	1	9.813 012 1
RV 10 digital V-C	with heating bath HB 10, vertical glassware, coated RV 10.10, vapor tube RV 10.70	1	9.813 014
RV 10 digital V FLEX	with heating bath HB 10, Woulf bottle, spherical joint clip RV 05.10, clamp, NS 29 RV 10.88, vapor tube RV 10.70	1	9.813 015
RV 10.70	Vapor tube made of borosilicate glass, NS 29/32	1	6.237 535
RV 10.8001	Lip-seal from a PTFE compound with a built-in stainless steel spring	1	4.008 136

➔ Heating bath liquid - please see page 774.

We can supply this  
manufacturer's  
whole  
product range !

**IKA®**

partner of the  
**LLG**  
Lab Logistics Group

#### Rotary evaporator RV 10 control

IKA

The RV 10 control is the flagship of the rotary evaporator series by IKA®. It stands out by virtue of use with color graphic display, integrated vacuum controller, cooling water monitoring and sophisticated safety standards. But the IKA® RV 10 control goes one step further. Like the RV 10 digital, it can be precisely controlled via the RS 232 interface for remote PC operation with IKA's labworldsoft® and is thus ideal for automatic operation, but that's not all; the control functions also enable completely automatic distillation both for volume based processes and full drying depending on the area of application. The expandable solvent library also allows you to incorporate new processes.

Same properties as RV 10 digital, with the following additional functions:

Integrated vacuum controller with central display for automatic distilling and ramp programming

- Integrated solvent library, which can be extended by the user
- Distillation specific parameters stored for standard distillations
- Automatic transfer of measurements and distillation type with one key press
- Programmable volume controlled distillation
- Colour graphic display for safe and comfortable operation
- Display of distillation curves
- Multiple languages
- Automatic ventilation at the end of each test
- Cooling water switched off automatically at the end of the test
- Integrated cooling water monitoring
- Heating bath safety management; automatic heating bath monitoring with distillation stop in case of temperature errors
- Heating bath switched off automatically at the end of the test
- USB interface
- 5 years warranty after registration
- New: Now RV 10.4002 Magnetic valve included in delivery

Type	Description	PK	Cat. No.
RV 10 control V	with heating bath HB 10, vertical glassware RV 10.1 and RV 10.4002 Magnetic valve laboratory vacuum	1	9.813 004 <b>1</b>
RV 10 control V-C	with heating bath HB 10, vertical glassware, coated RV 10.10 and RV 10.4002 Magnetic valve laboratory vacuum	1	9.813 005
RV 10 control FLEX	with heating bath HB 10, incl. Woulff bottle and RV 10.4002 Magnetic valve laboratory vacuum, glassware - please order separately	1	9.813 006
RV 10 control V auto	with heating bath HB 10, speed-controlled pump N 920, vertical glassware RV 10.1	1	9.813 007 <b>2</b>
RV 10 control V-C auto	with heating bath HB 10, speed-controlled pump N 920, vertical glassware, coated RV 10.1	1	9.813 008



9.813 004



9.813 007

#### Accessories for Rotary evaporators RV 8/RV 10 digital/RV 10 control

**(NEW)**

IKA

Type	Description	PK	Cat. No.
MVP 10 basic	Vacuum pump	1	9.813 010
N 920 KT.29.18	Vacuum pump	1	6.229 964
LVS105T-10 ef	Vacuum pump	1	4.008 149
VCV 1	Vacuum control valve	1	9.813 016
RV 10.4001	Magnetic valve in-house vacuum	1	6.237 539
RV 10.4002	Magnetic valve laboratory vacuum	1	6.237 538
RV 10.4003	Pump control incl. magnetic valve	1	6.237 330
RV 10.5001	Choke water valve	1	6.237 540
RV 10.5002	Filter	1	6.237 541
RV 10.5003	Pressure regulating valve	1	6.237 542

### 1 Rotary evaporator RC 900

**NEW!**

KNF

- Sleek design, small footprint
- Whisper quiet for a pleasant working environment
- Versatile use, simple operation

#### Features

- Chilled condenser is straightforward to detach by turning the tension nut. The chilled condenser is also extremely easy to clean.
- Relevant parameters for distillation and for the heating bath are easily set by touching and turning.
- Cordless heating bath with drain for safe bleeding and emptying without spillages.
- Hose guide inside the tower - tidy and safe, with hoses no longer an obstruction.
- Straight-forward flask exchange - glass flask simply locks into place - and can be done with one hand.
- Convenient, fully adjustable flask angle set via a control knob.

#### Specifications

Heating bath: heating temperature	20 - 180°C
Coolant supply (chilled condenser)	
Permissible pressure:	3bar
Permissible temperature:	15°C bis +20°C
Cooled surface area:	1230cm <sup>2</sup>
Parameters of evaporation flask	
Size of evaporation flask:	50 - 3000ml
Rotational speed:	25 - 250 min <sup>-1</sup>
Length of stroke:	150mm
Lifting speed:	approx 38mm/s
Dimensions (L x H x W)	
Without glass:	447 x 464 x 431mm
With glass:	447 x 823 x 487mm
Weight:	9.1kg

Type	PK	Cat. No.
Rotary evaporator RC 900	1	7.660 052
Protective cover for heating bath	1	7.660 053



➔ Suitable Vacuum pumps - please see page 974.

### 1 Bladder for rotary evaporators for venting with inert gas

Football bladder

Deutsch &amp; Neumann

Type	PK	Cat. No.
Bladder for rotary evaporators	1	9.115 515



### Evaporator flask pear shape, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3, according to DIN 12383

Isolab

Capacity ml	NS	PK	Cat. No.
100	29/32	1	6.237 167
250	29/32	1	6.237 711
500	29/32	1	6.243 664
1000	29/32	1	6.236 112 <b>2</b>



6.236 112

### Evaporating flasks with conical ground joint, DURAN®

Especially for rotary evaporators, with center neck and conical joint, pear-shaped, material: DURAN®

Lenz

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
50	29/32	56	1	9.196 020
100	29/32	60	1	9.196 024
250	29/32	81	1	9.196 036
500	29/32	101	1	9.196 044 <b>3</b>
1000	29/32	126	1	9.196 054
2000	29/32	158	1	9.196 063



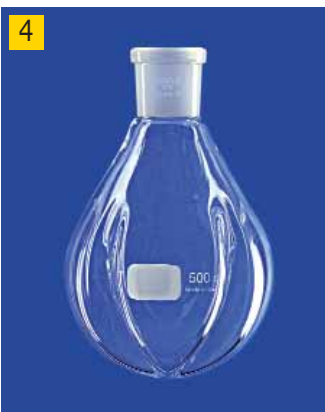
9.196 044

### Powder flasks with conical ground joint, DURAN®

Specially for rotary evaporators. For the drying of powder-like substances. With centre neck and conical joint, with inscription label.

Lenz

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
100	29/32	60	1	6.205 965
250	29/32	81	1	6.205 966
500	29/32	101	1	6.205 512 <b>4</b>
1000	29/32	126	1	6.206 195
2000	29/32	158	1	6.205 692



6.205 512

### Receiving flasks, with spherical ground glass joint, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 and meeting quality standards according to DIN 12383 standards.

Isolab

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
100	35	64	1	6.243 665
250	35	85	1	6.243 666
500	35	105	1	6.243 667
1000	35	131	1	6.243 668 <b>5</b>



6.243 668

1



9.196 244

**Receiving flasks, DURAN®**

Especially for rotary evaporators, with spherical joint socket S 35, with and without, transparent PUR coating, autoclavable, material: DURAN®.

Lenz

Capacity ml	Socket NS	Description	Flask diam. mm	PK	Cat. No.
100	35	uncoated	64	1	9.196 224
250	35	uncoated	85	1	9.196 236
500	35	uncoated	105	1	9.196 244 1
500	35	PUR coating	105	1	7.653 714
1000	35	uncoated	131	1	9.196 254
1000	35	PUR coating	131	1	9.812 217
2000	35	uncoated	166	1	9.196 263
2000	35	PUR coating	166	1	6.200 782

2



9.011 698

**Fork clamps for spherical joints**

Material: stainless steel. For spherical ground joint connections. With set screw.

Lenz

Size	PK	Cat. No.
S 13	1	9.011 693
S 19	1	9.011 694
S 29	1	9.011 695
S 35	1	9.011 698 2
S 40 / 41	1	9.011 696
S 65	1	9.011 697

**PUR Coating, autoclavable**

Lenz

**Physical Properties**

Autoclavable

Transmission

Long-term heat resistance

Max. heat resistance

Suitable for freezing

Suitable for microwave use:

**Chemical Properties (Resistance)**

Water

Organic solvents

- alcohol

- acetone

- tetra

Inorganic acids, bases

- hydrochloric acid ( up to 20%)

- nitric acid (up to 20%)

- sulphuric acid (up to 20%)

- caustic soda (up to 20%)

Cleaning resistance

- industrial washers/clinic

- household dishwashers

121°C/2.05 bar/20 minutes - max. 100 cycles

absorption up to 380nm

up to 140°C

up to 190°C for a short time

-30°C

yes

up to 100°C

room temperature/5 min. constant exposure

room temperature/5 min. constant exposure

Standard disinfectants and detergents

up to 50 cycles/ max. 95°C

up to 50 cycles/ max. 65°C

3



6.246 010

**Evaporating flasks with conical ground joint, DURAN®, with PUR coating****NEW!**

Especially for rotary evaporators, with center neck and conical joint, with highly transparent PUR coating, autoclavable, pear-shaped, material: DURAN®

Lenz

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
50	29/32	56	1	6.246 006
100	29/32	60	1	6.246 007
250	29/32	81	1	6.246 008
500	29/32	101	1	6.246 009
1000	29/32	126	1	6.246 010 3
2000	29/32	158	1	6.242 495
3000	29/32	175	1	6.246 011



Please note that the maximum speed of a centrifuge can be decreased due to the maximum speed value of the rotor. Maximum speed and also the reachable g-value always depends on the rotor's values.

1 LLG mini centrifuge uniCFUGE 2 with universal rotor NEW!

A compact and reasonably priced mini centrifuge with a universal rotor for 6x 1.5/2.0ml, 6x 0.5ml tubes or 2 times 8x 0.2ml PCR-strips. Speed can be adjusted to 4000rpm or 6000rpm. Powerful motor for fast starting. Quick stop when the lid is opened. 3 years warranty.

Specifications

Max. RCF:	1200xg and 2000xg
Max. speed:	4000rpm and 6000rpm
Max. load:	6 x 0.5/1.5/2ml or 2 x 8-tube PCR strips (0.2ml)
Dimensions (diam. x H):	140 x 120mm
Weight:	0.7kg
Power supply:	100 - 240V, 50/60Hz, 1A
Guarantee:	3 years

Description	PK	Cat. No.
uniCFUGE 2 with EU-plug	1	6.263 510
uniCFUGE 2 with UK-plug	1	6.263 511

1



2 LLG mini centrifuge uniCFUGE 3 with timer and digital display NEW!

A compact and reasonably priced mini centrifuge with brushless and non-wearing high-efficiency motor. Stepless speed adjustment from 0 to 6000rpm. Microprocessor controlled regulation for load-independent accuracy and integrated imbalance control. Integrated timer (0-25 minutes) and high speed- constancy for reproducible results. Quick stop when the lid is opened. 2 flow-optimised rotors for 8 x 1.5/2ml or 16 x 0.2ml tubes reduce noise level and heat generation. Supplied with suction feet for a stable operation. 3 years warranty.

**Supplied with:** Centrifuge, rotor for 8 x 1.5/2ml tubes, rotor for 16 x 0.2ml tubes, adapter for 8 x 0.2/0.4/0.5ml tubes

Specifications

Max. RCF:	2000xg
Max. speed:	variable up to 6000rpm
Accuracy speed:	±25rpm
Motor:	brushless DC motor
Max. load:	8 x 1.5/2ml or 16 x 0.2ml PCR tubes
Dimensions (diam. x H):	160 x 116mm
Weight:	1.1kg
Power supply:	100 - 240V, 50/60Hz
Guarantee:	3 years

Description	PK	Cat. No.
uniCFUGE 3 with EU-plug	1	6.263 520
uniCFUGE 3 with UK-plug	1	6.263 521

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1 2 3 LLG mini centrifuge uniCFUGE 5 with timer and digital display



Compact microcentrifuge with excellent price-performance ratio and a performance of up to 15.595xg.  
Microprocessor controlled brushless motor for speeds up to 15.000rpm.  
Operation possible in RPM or RCF mode. Short-spin mode with selectable RZB and RPM values.  
Fixed angle rotor with lid, made of aluminium for 12 x 1.5/2ml tubes with optimised aerodynamics which minimize heat generation and noise during use.  
Large LCD readout with intuitive and user-friendly interface. Integrated imbalance-detection with automatic shutdown.  
Wide suction feet provide a stable base.  
The centrifuge can be controlled via computer by using the included software that can store up to 99 user-defined programmes.  
Operational record output to Excel.  
3 years warranty.

Item consists of:

- Centrifuge with rotor (incl. lid) for 12 x 1.5/2ml tubes
  - Power supply with USB cable
  - 12 Adapters for 0.4/0.5ml tubes
  - 12 Adapters for 0.2ml tubes
  - Allen wrench with T handle
  - Software CD
  - User manual
- Optional:
- Rotor (Cat. No. 6.263 535) for 16 x 0.2ml tubes or 2 x 8 PCR-strips

Specifications

Max. RCF:	15.595xg
Max. speed:	variable from 500 up to 15.000rpm
Accuracy speed:	±100rpm
Motor:	brushless DC motor
Max. load:	12x2ml PCR tubes
Dimensions (WxDxH):	262 x 230 x 131mm
Weight:	4kg
Power supply:	100 - 240V, 50/60Hz
Guarantee:	3 years

Type	PK	Cat. No.
uniCFUGE 5 with EU-plug	1	6.263 530
uniCFUGE 5 with UK-plug	1	6.263 531
Rotor for 16 x 0,2ml tubes or 2 x 8 PCR-strips	1	6.263 535



## 6. Distillation, separation, filtration

### Separating, centrifuging/Minicentrifuges

#### 1 2 3 Mini-Centrifuge Sprout®

New SnapSpin™ rotors - a new approach to compact centrifuge use!

Heathrow Scientific

Introducing the next generation of the Sprout® mini-centrifuge loaded with new features for increased efficiency in the lab. Two new SnapSpin rotors (a six-place standard rotor and an eight-place strip rotor) snap-in and out for fast and easy changes! Plus, two sets of adapters accommodate all major microtube and PCR® tube styles (2.0, 1.5, 0.5, 0.2 mL) for customized use. The Sprout is ideal for microfilter cell separations and HPLC samples. With most spins lasting around 20 seconds, the ergonomically designed lid is specifically designed to fit in the palm of your hand for easy repeat opening and use. Made with UV resistant plastic.

Operation is now faster and easier: Snap in rotor, load and close. For repeated spins, simply close the lid to reactivate.

An internal safety switch ensures the Sprout will not operate without the lid open.

Small size offers minimal benchtop space and removable cord for compact storage.

- Low noise and vibration
- Small size
- Quick Spin feature for short spins.
- Numbered tube positions
- Unit will not operate without lid in place
- Power Adapter with power cords for worldwide usage
- CE certified.
- RoHS2 compliant

Sprout® includes:

- Two easy change, tool-free rotors. 1. Circular, one-size rotor for six 1.5- and 2.0ml tubes or use with adapters to spin six 0.5ml tubes. 2. Strip rotor for two 8 x 0.2ml PCR tube strips or 16 x individual 0.2ml PCR tubes.
- Six 0.2 mL and six 0.5 mL adapters for customized use.
- Storage Case, PP - Keeps rotors and adapters contained and dust-free
- Tube Rack, PP - Convenient for handling samples before and after quick spins.
- For 16 x 2.0/1.5ml micro centrifuge tubes (diam. 12mm).
- 4 replacement lid o-rings

#### Specifications

Max. RCF:	2000xg
Max. speed:	6000rpm
Max. capacity:	6 x 1.5/2.0ml tubes or 2 x 8-strips PCR
Power consumption:	7.3W
Dimensions:	153 x 128 x 104mm
Weight:	1.45kg
Power supply:	100-240VAC, 50/60Hz, 0.6A

Type	PK	Cat. No.
Sprout®	1	6.254 604

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#### 4 5 High-Speed Mini-Centrifuge Gusto™

Maximum speed with minimal space. This compact centrifuge is ideal for most protocols

Heathrow Scientific

calling for fast spins (up to 12500 rpm/9100 rcf) and quick spindowns. Useful for PCR®, microfilter cell separation, clinical applications, and HPLC protocols. Operation is extremely simple for this high-level of sophistication: Insert tubes, close lid, adjust speed/time, and press Start. For duplicate spins, simply reload rotor and push Start. Designed with quick-spin option for commonly used 20-second spins. Also includes a tool-free, quick-change rotor system.

Safety features ensure the unit will not operate with an open lid, a jammed rotor or when out of balance. Gusto™

provides the option of setting and displaying in rpm or rcf. Efficiently designed for minimum bench top space. Included features typically found on more expensive units.

#### Supplied with:

- 12 place standard rotor with lid for 1.5/2ml tubes
- 8-place strip rotor for four 0.2ml tube strips or 32 single tubes
- Twelve 0.2ml and twelve 0.5ml adapters for customized use
- Power Adapter with power cords for e.g. EU, UK, CH, USA

#### Specifications

Max. RCF:	9800 x g
Max. speed:	12500rpm
Max. capacity:	12 x 1.5/2.0ml tubes or 4 x 8 strips PCR
Timer:	1sec to 30min in 1sec steps
Power consumption:	96W
Dimensions:	203 x 171 x 114mm
Weight:	2.7kg
Power supply:	100 - 240 V, 50/60 Hz

Type	PK	Cat. No.
Gusto™	1	6.254 597

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#### 1 Centrifuge/vortexer, Combi-spin PCV-2400

Combined centrifuge/vortex mixer for microtubes and 0.2ml strips. For independent centrifuge and vortex mixing, or mixing of an individual tube concurrently with spinning of multiple tubes. The vortex cup, located at the top of the central shaft, emerges through an opening in the closed lid. In spin-mix-spin applications, the Combi-spin can be used with very low reagent volumes.

Grant

- interchangeable rotors for 2.0ml, 1.5ml, 0.5ml, 0.2ml microtube combinations and 0.2ml strips.
- continuous operation or short spin
- supplied with 2 rotors: 12 x 1.5/2.0ml and 12 x 0.5ml plus 12 x 0.2ml

##### Specifications

Max. RCF:	700 x g
Max. speed:	fixed at 3.500rpm
Max. capacity:	12 x 1.5/2.0ml or 12 x 0.5ml plus 12 x 0.2ml or 2 x 0.2ml strips of 8
Power consumption:	25W
Dimensions (WxDxH):	190 x 235 x 125mm
Weight:	2.1kg
Power supply:	230V, 50/60Hz

Type	PK	Cat. No.
PCV-2400	1	9.721 001

2



9.721 004

#### 2 Centrifuge Multi-spin PCV-6000

Combined centrifuge/vortex mixer for microtubes and 0.2ml strips. For independent centrifuge and vortex mixing operations, or a programmable sequence of spin and mix phases of multiple tubes.

Grant

- Vortex mixing intensity: three stage adjustment (soft, medium and hard)
- Interchangeable rotors for 2.0ml, 1.5ml, 0.5ml, 0.2ml microtube combinations and 0.2ml strips
- Timed vortex mixing: 1sec to 20sec
- Supplied with 2 rotors: 12 x 1.5/2.0ml and 12 x 0.5ml plus 12 x 0.2ml

##### Specifications

Max. RCF(bottom of tubes)	2350xg
Max. speed	6000rpm
Max. capacity:	12 x 1.5/2.0ml or 12 x 0.5ml plus 12 x 0.2ml or 2 x 0.2ml strips of 8
Spin Timer	1sec to 30min
Power consumption	24W
Dimensions (WxDxH):	190 x 235 x 125mm
Weight:	2.5kg
Power supply:	100 - 240V, 50/60Hz
Input voltage	24V

Type	Description	PK	Cat. No.
PCV-6000	Centrifuge Multi-spin	1	9.721 004 2
PR2-05	Rotor for 8 x 1.5/2.0ml plus 8 x 0.5ml tubes	1	9.721 006
PR2-05-02	Rotor for 6 x 1.5/2.0ml plus 6 x 0.5ml plus 6 x 0.2ml tubes	1	9.721 007
PSR-16	Rotor for 2 x 8-well 0.2ml microtube strips	1	9.721 008

3



#### 3 Mini Plate Spinner MPS 1000

- quickly spin down droplets and condensation
- use before and after thermal cycling to increase PCR yield
- accepts skirted, non-skirted and all standard PCR plates
- less than ¼ x the size of most plate centrifuges

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##### Specifications

Max. RCF:	500xg
Max. speed:	2500rpm
Max. capacity:	2 PCR Plates
Power consumption:	75W
Dimensions (WxDxH):	483 x 534 x 465mm
Weight:	3kg
Power supply:	230V 50/60Hz

Type	PK	Cat. No.
MPS 1000	1	9.945 790



#### 1 Mini Centrifuge Prism™ Mini

The Prism Mini can be used for a wide range of molecular biology separations and quick spins. The centrifuge was designed to be extremely compact with an exceptionally small footprint. It includes 2 quick release interchangeable rotors, which spin up to 6000rpm's. The electronic brake and self opening lid allow for quick deceleration to reduce handling time. The Prism Mini's maintenance-free drive is remarkably quiet and the unique design allows for excellent airflow, to protect temperature sensitive samples.

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- Quick release rotor exchange
- Increased sample capacity
- Rapid sample processing
- One-step sample retrieval

**Supplied with:** Mini Centrifuge incl. 8 place tube rotor for 1.5/2.0ml microcentrifuge tubes, incl. adapters for 0.5ml and 0.4ml tubes and PCR strip rotor for 4 strips with 8 x 0.2ml tubes or 32 x 0.2ml single tubes.

**Further adapters available on request.**

#### Specifications

Max. RCF:	2000 x g
Max. speed:	6000rpm
Max. capacity:	8 x 1.5/2.0ml or 4 strips with 8 x 0.2ml
Power consumption:	5W
Dimensions (WxDxH):	132 x 132 x 112mm
Weight:	0.55kg
Power supply:	230V, 50/60Hz

Type	PK	Cat. No.
Mini Centrifuge Prism™ Mini	1	9.945 789
Individual adapters for 0.5/0.6ml tubes	8	9.945 781
Individual adapters for 0.4/0.25ml tubes	8	9.945 782
Individual adapters for 0.2ml thermal cycling tubes	8	9.945 783

#### 2 Micro Centrifuge Microspin 12

Compact high-speed benchtop micro centrifuge with a built-in rotor for 12 x 1.5/2ml microtubes. Ideal for biomedical laboratories.

Grant

2

- Fixed angular aluminium rotor accommodates 12 x 1.5/2 ml microtubes, supplied with 12 adapters for 0.2ml and 0.5ml tubes and fixing lid (rotor autoclavable, lid not autoclavable)
- Timed operation (1 to 30 minutes), with automatic switch-off
- Suitable to use in cold rooms, operating temperature ambient +4°C to 25°C
- Metal protective inserts inside the lid and casing, automatic imbalance switch-off and locking of a lid provide safe operation
- Constant airflow around the rotor reduces risk of samples overheating during centrifugation
- Simple push-buttons and a clear 2-line LCD status display shows actual and set values of time, set and actual speed and relative centrifugal force (g-force)
- Low voltage cord easily fits through refrigerator or workstation door gaskets
- Compact design and quiet in operation
- Fits neatly and unobtrusively into the workspace

#### Specifications

Max. RCF:	12.400xg
Max. speed:	14.500rpm
Max. capacity:	12 x 0.2/0.5/1.5/2ml tubes
Timer:	1 to 30 min
Power consumption:	60W
Dimensions (WxDxH):	200 x 240 x 125mm
Weight:	3.5kg
Power supply:	230V, 50/60Hz

Type	PK	Cat. No.
Microspin 12	1	9.721 003



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### 1 MiniSpin® and MiniSpin® Plus personal centrifuges

Eppendorf

#### Features:

- Extremely compact and small footprint
- Especially quiet due to its carefully balanced drive
- Maintenance-free motor
- Clear digital display
- Minimal sample heating (after 20min. at max. speed only 12°C max.)
- Separate short-spin button
- Automatic lid opening
- Integral power supply unit
- Capacity: 12 x 1.5/2ml containers
- Autoclavable rotor (121°C, 20min.)
- Start-up/slow-down time less than 13 secs. (to/from max. speed).

#### Additional features of MiniSpin®

- Includes standard anodised aluminium rotor
- Timer can be set for up to 30 minutes

#### Additional features of MiniSpin® Plus

- Includes premium "Black Line" aluminium rotor
- Speed/rcf display switch
- Timer can be set for up to 99 minutes
- Permanent centrifuging option

#### Specifications

Max. RCF	
MiniSpin®:	12.400 x g
MiniSpin® plus:	14.100 x g
Max. speed	
MiniSpin®:	13.400rpm
MiniSpin® plus:	14.500rpm
Max. capacity:	12 x 1.5/2ml tubes
Timer	
MiniSpin®:	0 - 30min
MiniSpin® plus:	0 - 90min, continuous run
Power consumption	
MiniSpin®:	70W
MiniSpin® plus:	85W
Dimensions (WxDxH):	225 x 240 x 120mm
Weight:	4.3kg
Power supply:	230V, 50/60Hz

Type	PK	Cat. No.
MiniSpin®	1	9.776 500
MiniSpin® plus	1	9.776 501
Rotor F-55-16-5-PCR incl. lid	1	9.776 521
Lid, stainless steel for F-55-16-5-PCR	1	9.776 522
Adapter for 0.5ml microcentrifuge tubes and 0.6ml microtainers	6	9.776 488
Adapter for 0.4ml microcentrifuge tubes	6	9.776 487
Adapter for 0.2ml PCR-vessels	6	9.776 504

2



### 2 Mini-centrifuge mini G

IKA

Mini-centrifuge for all applications which do not require high speeds, e.g. micro-filtrations and cell separation. Transparent cover allows constant observation of centrifuge.

The mini-centrifuge can be used for both PCR-vessels and PCR-strips.

As a safety feature, the centrifuge will run only when the lid is closed. Lid opens easily with the press of a button.

- Fixed speed of 6000rpm
- Digital timer adjustable from 1 to 99min
- Integrated quick stop
- Fast start-up of speed
- Compact design and quiet operation
- Rotor exchangeable without tools
- Easy operation with touch keypad

#### Specifications

Max. RCF:	2000xg
Max. speed:	6000rpm
Max. capacity:	8 x 2.0ml
Timer:	1 to 99min
Power consumption:	12W
Dimensions (WxDxH):	155 x 175 x 105mm
Weight:	1.4kg
Power supply:	24V DC voltage

Type	PK	Cat. No.
mini G incl. plug for UK/CH	1	9.570 480



## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### 1 Microcentrifuge Spectrafuge™ 24D



1

The Spectrafuge™ 24D combines innovations such as a unique, easy access rotor, exclusive multi-flow air cooling system and high performance drive with a digital microprocessor that precisely regulates operation. Parameters are selected with two "smart" knobs and values are shown on large, easy to read, LED displays. Speed can be set and displayed in rpm or g-force while runs may be timed, continuous or momentary. The unique design of the 24-place rotor allows easy access to the tops of the tubes. An optional StripSpin™ adapter fits onto the rotor for spinning 0.2ml tubes and strips. A powerful, brushless motor quickly accelerates the rotor to set speed. Air enters the centrifuge through vents on the back of the housing and it is circulated in multiple directions to maximize cooling. The result is a cool running microcentrifuge that keeps samples close to ambient temperature, even during extended runs at maximum speed. For samples that require below ambient temperatures, the Spectrafuge 24D may be used in a cold room.

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#### Specifications

Max. RCF:	16.300xg
Max. speed:	13.300rpm
Max. capacity:	24 x 1.5ml/2.0ml
Timer:	1 to 30min
Power consumption:	210 W
Dimensions (WxDxH):	235 x 293 x 216mm
Weight:	8.1kg
Power supply:	230V/50Hz or 120V/60Hz

Type	PK	Cat. No.
Spectrafuge™ 24D, blue accents	1	9.945 799
Spectrafuge™ 24D, purple accents	1	6.260 731

#### Microcentrifuge Prism™/Prism™ R

Operation can be timed, continuous or momentary, using the "quick" button. Vibration free operation is ensured by an isolation system. In the event of a significant imbalance, operation of the centrifuge is automatically stopped. Deceleration at the end of a run is very quick, but will not disrupt samples. Supplied with a uniquely designed 24 x 1.5ml/2.0ml rotor that allows easy access to the tops of the sample tubes. Individual tube slots in the solid aluminum rotor support tubes along their length and contain the sample in the event of tube failure. The rotor is seated on a tapered shaft which facilitates easy removal for cleaning and autoclaving.

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9.945 795

Adapters for smaller tubes and PCR strips -please order separately.

#### Specifications

Max. RCF	
Prism™:	21.200xg
Prism™ R:	17.135xg
Max. speed	
Prism™:	15.000rpm
Prism™ R:	500 to 13.500rpm
Max. capacity:	24 x 1.5/2.0ml
Cooling temperature Prism™ R:	-10 to +40°C
Timer:	0.5 to 99 minutes or continuous "Quick" button for momentary operation
Power consumption	
Prism™:	210W
Prism™ R:	500 W
Dimensions (WxDxH)	
Prism™:	240 x 350 x 190mm
Prism™ R:	277 x 450 x 247.5mm
Weight	
Prism™:	9.6kg
Prism™ R:	20kg
Power supply:	230V, 50Hz or 120V, 60Hz

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9.945 793

Description	PK	Cat. No.
Prism ambient microcentrifuge with 24 place rotor	1	9.945 795 2
Prism R ambient microcentrifuge with 24 place rotor and cooling	1	9.945 793 3
StripSpin adapter for 0.2ml tubes and strips	1	9.945 794
Individual adapter for 0.5/0.6ml tubes	6	9.945 796
Individual adapter for 0.4/0.25ml tubes	6	9.945 797
Individual adapter for 0.2ml thermal cycling tubes	6	9.945 798

#### Microcentrifuge 5418/5418 R

##### Microcentrifuge 5418

Eppendorf

- 18 place rotor for 1.5/2.0ml tubes
- Lid opens automatically after spinning
- Very small profile, minimal bench space required
- Remarkably silent, even without rotor lid
- Standard, certified aerosol-tight rotor
- Convenient Eppendorf two-dial operation
- rpm/rcf converter
- Short-spin

##### Microcentrifuge 5418 R, with additional features:

- The patented compressor technology reduces vibration to a minimum
- Temperature range: 0°C to +40°C
- Low access height of 26cm
- Keeps a constant 4°C at max. speed
- Fast Temp for rapid pre-cooling of the centrifuge

##### Specifications

Max. RCF:	16 873xg
Max. speed:	14 000rpm
Max. capacity:	18 x 1.5/2.0ml
Cooling temperature 5418 R:	0 to +40°C
Timer:	30sec to 9:59h, with continuous run
Power consumption	
5418:	170W
5418 R:	320W
Dimensions (WxDxH)	
5418:	210 x 300 x 210 mm
5418 R:	300 x 460 x 250 mm
Weight	
5418:	7.7kg
5418 R:	22kg
Power supply:	230V, 50/60Hz

Type	Description	PK	Cat. No.
5418	incl. Rotor F-45-18-11	1	9.776 700 <b>1</b>
5418 R	incl. Rotor F-45-18-11, with cooling	1	9.776 702
Rotor F-45-18-11	incl. aerosol-tight rotor lid	1	9.776 705

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9.776 700

### 1 Microcentrifuge 5424/5424 R



Eppendorf

#### Microcentrifuge 5424

- 24-place-centrifuge
- aerosol tight rotors
- 4 different rotors
- very quiet in operation, even without rotor lid
- Choice of analogue dial or membrane keypad control
- adjustable soft ramp acceleration

#### Microcentrifuge R 5424, additional features:

- The patented compressor technology reduces vibration to a minimum
- Temperature range: -9°C to +40°C
- Small footprint and low access height of 26cm
- Keeps a constant 4°C at max. speed
- Fast Temp for rapid pre-cooling of the centrifuge, for example, from about 21°C to 4°C in 8 mins.

#### Specifications

Max. RCF	
5424:	20238 x g
5424 R:	21130 x g
Max. speed	
5424:	14680rpm
5424 R:	15000rpm
Max. capacity:	24 x 1.5/2ml
Cooling temperature 5424 R:	-10 to +40°C
Timer:	30sec to 9:59h, with continuous run
Power consumption	
5424:	250W
5424 R:	350W
Dimensions (WxDxH)	
5424:	240 x 320 x 230mm
5424 R:	290 x 480 x 260mm
Weight	
5424:	13.4kg
5424 R:	21kg
Power supply:	230V, 50/60Hz

Type	Description	PK	Cat. No.
5424	with control knobs, with rotor	1	9.776 710
5424	with foil keypad, with rotor	1	9.776 711
5424	with control knobs, without rotor	1	9.776 712
5424	with foil keypad, without rotor	1	9.776 713
5424 R	with control knobs, with rotor, aerosol-tight	1	9.776 762
5424 R	with foil keypad, with rotor, aerosol-tight	1	9.776 760
5424 R	with control knobs, without rotor	1	9.776 763
5424 R	with foil keypad, without rotor	1	9.776 761
Standard rotor FA 45-24-11	with lid, aerosol tight	1	9.776 724
Fixed angle rotor FA 45-24-11	with lid	1	9.776 723

Other rotors available on request.

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### 1 Microcentrifuge 5430/5430 R

#### Microcentrifuge 5430

Eppendorf

- Choice of 8 different rotors, e.g. MTP rotor, Falcon rotor for max. versatility
- 48 place centrifuge for 1.5ml/2.0ml micro test tubes, 6 x 50ml Falcon® tubes or 2 x MTP plates
- Unique 30 130xg
- Automatic rotor recognition
- Stores up to 50 routine programs
- Menu guided operation in 4 different languages
- Automatic lid opening following application sequence (only 5430)

#### Microcentrifuge 5430 R, additional features:

- Temp. range: -11°C to +40°C
- +4°C at max. speed with all rotors
- Continues cooling after the centrifugation process
- Fast Temp for achieving required temperature in shortest possible time
- Fast Temp pro for having the centrifuge refrigerated and ready-for-use at your desired pre-set time

#### Specifications

Max. RCF	30130 xg
Max. speed:	17500rpm
Max. capacity:	48 x 1.5/2.0ml or 6 x 50ml or 2 x MTP
Cooling temperature 5430 R:	-11 to +40°C
Timer:	30sec to 9:59h, with continuous run
Power consumption	
5430:	475 W
5430 R:	1050 W
Dimensions (WxDxH)	
5430:	330 x 420 x 250 mm
5430 R:	380 x 640 x 290 mm
Weight	
5430:	29 kg
5430 R:	56 kg
Power supply:	230V, 50/60Hz

Type	Description	PK	Cat. No.
5430	without rotor, with membrane keypad	1	9.776 731
5430	without rotor, with dial setting	1	9.776 732
5430	with rotor FA-45-30-11	1	9.776 730
5430	with rotor FA-45-30-11, with dial setting	1	9.776 733
5430 R	without rotor, with membrane keypad	1	9.776 734
5430 R	without rotor, with dial setting	1	9.776 735
5430 R	with rotor FA-45-30-11, with membrane keypad	1	9.776 736
5430 R	with rotor FA-45-30-11, with dial setting	1	9.776 737

2



9.776 923

### Rotors for microcentrifuge 5430/5430 R

(NEW!)

Rotor lids included.

**FA-45-48-11:** Standard rotor for 48 x 1.5/2.0ml tubes, aerosol-tight, Eppendorf QuickLock® closure

**F-45-48-11:** Rotor for 48 x 1.5/2.0ml tubes

**FA-45-16-17:** Fixed angle rotor for 16 x Eppendorf Tubes® 5.0 ml, aerosol-tight, Eppendorf QuickLock® closure

**FA-45-30-11:** Fixed angle rotor, 30 x 1.5/2.0ml tubes, incl. aluminium lid, coated, aerosol-tight.

Rotor is autoclavable (20min, 121°C)

**F-45-30-11:** Fixed angle rotor, 30 x 1.5/2.0ml tubes, coated, aerosol-tight. Rotor is autoclavable (20min, 121°C)

**FA-45-24-11-Kit:** Kit-Rotor for 24 Spin Columns or 1.5/2.0ml tubes, aerosol-tight.

Rotor for centrifugation with open tube lids

**F-35-6-30:** Falcon® rotor for 6 x 15/50ml tubes, incl. adapter

**A-2-MTP:** Swing out rotor for MTP or PCR plates, incl. 2 x MTP buckets, max. loading height 29mm

**S-24-11-AT:** Swing out rotor for 24 x 1.5/2.0 ml tubes, aerosol-tight

3



9.776 751

Type	Max. speed rpm	Max. rcf x g	PK	Cat. No.
FA-45-48-11**	12700	18210	1	9.776 777
F-45-48-11	12700	18210	1	9.776 778
FA-45-16-17	14200	21191	1	9.776 923 2
FA-45-30-11***	14000	20800	1	9.776 776
F-45-30-11*	14000	20800	1	9.776 740
FA-45-24-11-Kit**	13200	19090	1	9.776 775
F-35-6-30	7830	7197	1	9.776 747
A-2-MTP	4680	2204	1	9.776 751 3
S-24-11-AT**	12700	16049	1	9.776 780

\* PTFE-coated

\*\*aerosol-tight, PTFE-coated

\*\*\*incl. 2 MPT-supports

E &amp; OE.

Benchtop centrifuges, 5804/5804 R and 5810/5810 R



Eppendorf

- Flexible range of medium capacity, benchtop centrifuges and rotors tailored to research and clinical work
- Modular adapter system: accommodates a variety of tube lengths
- Ergonomic access height gives comfortable rotor loading
- Low noise level
- Motorized lid lock
- Reliable cooling at maximum speed\*
- Imbalance detector
- Automatic rotor recognition logs rotor performance parameters and prevents these being exceeded
- Optional user setting by speed, rcf or radius correction values
- Values can be changed during centrifugation
- Temperature setting from -9°C to +40°C\*
- Standby cooling\*
- Selectable programme memory for up to 34 individual user programmes
- Short-spin function, speed can be preselected
- Fast-cool function\*for rapid cooling of the centrifuge chamber
- 10 gentle acceleration and braking profiles for sensitive sample material

Specifications

Max. RCF:	20913 x g
Max. speed:	14000
Max. Load	
5804/5804 R:	10 x MTP or 2 x DWP
5810/5810 R	16 x MTP or 4 x DWP
Power consumption	
5804:	750W
5804 R:	1.350W
5810:	850W
5810 R:	1.350W
Dimensions (WxDxH)	
5804:	470 x 550 x 340mm
5804 R:	640 x 550 x 340mm
5810:	540 x 610 x 350mm
5810 R:	700 x 610 x 350mm
Weight	
5804:	55kg
5804 R:	80kg
5810:	68kg
5810 R:	99kg
Mains supply:	230 V, 50/60 Hz

Description	PK	Cat. No.
Centrifuge 5804, without rotor	1	9.776 400 <b>1</b>
Centrifuge 5804 R, without rotor	1	9.776 401 <b>2</b>
Centrifuge 5804 with rotor S-4-72 and 15/50ml adapter for conical tubes	1	9.776 396
Centrifuge 5804 with rotor A-4-44 and 15/50ml adapter for conical tubes	1	9.776 406
Centrifuge 5810, without rotor	1	9.776 404
Centrifuge 5810 R, without rotor	1	9.776 405
Centrifuge 5810 with rotor S-4-104 and 15/50ml adapter for conical tubes	1	9.776 398
Centrifuge 5810 with rotor A-4-62 and 15/50ml adapter for conical tubes	1	9.776 408
Centrifuge 5810 with rotor A-4-81 and 15/50ml adapter for conical tubes	1	9.776 409

\*Cooled models 5804 R and 5810 R only

1



9.776 400

2



9.776 401

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

GENERAL CATALOGUE EDITION 19

#### Manual centrifuge HAND CENTRIFUGE

**NEW!**

Hettich

Maintenance-free, bench-mounted manually operated centrifuge

This convenient centrifuge can be easily clamped to a bench or table, and operated without electricity. Its self-lubricating gear makes it virtually maintenance-free.

#### Specifications

Max. RCF:	13000 x g
Max. speed:	3000rpm
Max. capacity:	4 x 15ml
Dimensions (WxDxH):	140 x 175 x 285mm
Weight:	approx. 0.9kg



9.943 004

Description	PK	Cat. No.
Manual centrifuge, without rotor	1	6.050 054
Manual centrifuge, with rotor 4 x 15ml conical tubes	1	9.943 004 <b>1</b>
Rotor 4 x 15ml conical tubes	1	6.202 087
Rotor 4 x 15ml conical or round bottom tubes (max. length of 125mm and max. diam. 17mm)	1	6.233 904

#### Benchtop centrifuges EBA 200/EBA 200 S

**NEW!**

Hettich

The practical and handy EBA 200 and EBA 200 S are supplied with an 8-place angle rotor. Designed for small sample throughput, they are ideal for use in doctors' surgeries or in large laboratories as auxiliary equipment. With impulse key for short centrifuging, one-hand lid locking and lid holding. Easy entry of the parameters time and speed (rpm) via foil keypad. Actual values are displayed during centrifugation. Various tubes (incl. glass tubes) can be centrifuged without an adapter. Adapters for additional blood collection tubes are available on request. Model EBA 200 S is supplied with adapters for 13 x 75mm Vacutainers (1.6ml to 5ml).

#### Specifications

Max. RCF	
EBA 200:	3461xg
EBA 200 S:	6153xg
Max. speed	
EBA 200:	6000rpm
EBA 200 S:	8000rpm
Max. capacity:	8 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption	
EBA 200:	55 W
EBA 200 S:	80 W
Dimensions (WxDxH):	262 x 352 x 228mm
Weight	
EBA 200:	approx. 8kg
EBA 200 S:	approx. 10kg
Power supply:	200 - 240V, 50/60Hz



6.265 303

Type	Description	PK	Cat. No.
EBA 200	with angle rotor	1	6.265 303 <b>2</b>
EBA 200 S	with angle rotor	1	9.943 479

Accessories available on request.



6. Distillation, separation, filtration  
Separating, centrifuging/Benchtop centrifuges

Benchtop centrifuge EBA 270

The EBA 270 is a small centrifuge with a 90 degree swing-out rotor. It accepts common blood or urine tubes up to a volume of 15 ml and accelerates them to a maximum speed of 4.000rpm. Stainless steel chamber for easy cleaning, decontamination and maintenance. With microprocessor controlling, impulse key for short time centrifuging, one-hand lid closure and lid lock. Adjustable foil keypad with easy-to-read, multi-view digital display. Indication of the actual state during the run. Unit comes complete with 6-tube rotor and tube carriers (10ml and 15ml).

Hettich

Specifications

Max. RCF:	2254xg
Max. speed:	4000rpm
Max. capacity:	6 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption:	80W
Dimensions (WxDxH):	326 x 389 x 239mm
Weight:	approx. 14kg
Power supply:	200 - 240V, 50/60Hz



6.242 287

Type	Description	PK	Cat. No.
EBA 270	with swing-out rotor	1	6.242 287 1

2 Benchtop centrifuge ROTOFIX 32 A



Microprocessor-controlled benchtop centrifuge with a comprehensive and versatile range of accessories. 11 exchangeable rotors enable a multitude of applications. With frequency drive, impulse key for short period centrifuging, lid locking and holding. An "rcf" key allows display of the rcf during operation, while the key is pressed. Easy entry of rpm (speed) and time via foil keypad. Actual values are displayed during centrifugation.

Hettich

Specifications

Max. RCF:	4226xg
Max. speed:	6000rpm
Max. capacity:	4 x 100ml/32 x 15ml
Timer:	1 to 99min, continuous run, short cycle mode (impulse key)
Power consumption:	180W
Dimensions (WxDxH):	366 x 430 x 257mm
Weight:	approx. 23kg
Power supply:	208 - 240V, 50/60Hz



Type	Description	PK	Cat. No.
ROTOFIX 32 A	without rotor	1	9.943 119
1624	Swing-out rotor for max. 4 x 100ml or 4 slide preparations, without carriers	1	9.943 386
1481	Round carrier 100ml fitting into swing-out rotor 1624	1	9.943 339

Additional accessories on request.



9.943 118



6.237 606

### Microlitre centrifuges MIKRO 200/200 R



Hettich

Refrigerated and non-refrigerated, high-performance microlitre centrifuges. Five exchangeable rotors are available. With frequency drive, microprocessor control with 4 programmable memories, impulse key for short centrifuging, powered lid locking and "open lid" key. Easy entry of the parameters via select keys and a twist knob. A switch key enables entry/display of rpm (speed) or rcf, as required. Actual values are displayed during centrifugation. The refrigerated MIKRO 200 R allows chamber temperature control between -10 to +40°C. With the Fast Cool function it refrigerates to +4°C in 10 to 15 minutes. The "stand-by" mode maintains the set temperature between runs.

#### Specifications

Max. RCF:	21382xg
Max. speed:	15000rpm
Max. capacity:	30 x 0.2 to 2ml
Cooling temperature Mikro 200 R:	-10 to +40°C
Timer:	1sec to 99min : 59sec, continuous run, short cycle mode (impulse key)
Power consumption	
MIKRO 200:	240 W
MIKRO 200 R:	360 W
Dimensions (WxDxH)	
MIKRO 200:	275 x 344 x 260mm
MIKRO 200 R:	281 x 547 x 260mm
Weight	
MIKRO 200:	approx. 11.5kg
MIKRO 200 R:	approx. 28kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
MIKRO 200	without rotor	1	9.943 117
MIKRO 200 R	refrigerated, without rotor	1	9.943 118 <b>1</b>
2424-B	Angle rotor for 24 x 1.5/2.2 ml ml microtubes with standard lid	1	6.237 606 <b>2</b>
2428	Angle rotor for 24 x 0.2 to 2ml microtubes with filter insert	1	9.943 477

Additional accessories on request.



9.943 250



9.943 327

### Microlitre centrifuges MIKRO 220/220 R



Hettich

Microlitre centrifuges with outstanding performance characteristics. Model MIKRO 220 accommodates 9 alternative rotors, the refrigerated version MIKRO 220 R takes 13 alternative rotors. The MIKRO 220/220 R feature frequency drive, microprocessor control and impulse key for short period centrifuging. Extremely short acceleration and deceleration times, easy entry of the parameters via a foil keypad and digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. 10 complete running programmes can be stored and recalled. The refrigerated MIKRO 220 R can control chamber temperature between -20 and +40°C.

#### Specifications

Max. RCF:	31514xg
Max. speed:	18000rpm
Max. capacity:	60 x 0.2 to 2ml or 6 x 50ml (MIKRO 220 R only)
Cooling temperature MIKRO 220 R:	-20 to +40°C
Timer:	1 sec to 99 min : 59 sec, continuous run, short cycle mode (impulse key)
Power consumption	
MIKRO 220:	240 W
MIKRO 220 R:	360 W
Dimensions (WxDxH)	
MIKRO 220:	330 x 420 x 313mm
MIKRO 220 R:	330 x 650 x 313mm
Weight	
MIKRO 220:	approx. 42kg
MIKRO 220 R:	approx. 21kg
Power supply:	200 - 240V, 50/60Hz

Type	Description	PK	Cat. No.
MIKRO 220	without rotor	1	9.943 250 <b>3</b>
MIKRO 220 R	refrigerated, without rotor	1	9.943 251
1195-A	Angle rotor for 24 x 0.2 to 2ml microtubes with bio-containment lid	1	9.943 327 <b>4</b>

Additional accessories on request.

## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### 2 Benchtop centrifuges UNIVERSAL 320/320 R

**(NEW!)**

Hettich

The UNIVERSAL 320/320 R impress with excellent performance in both the high and low speed ranges, and versatile, easily exchangeable accessories. At low speeds, they process standard tubes up to a volume of 100ml, microtitre plates, conical tubes with screw cap, blood collection tubes and cyto accessories. Microlitre tubes can be accelerated to an rcf of 21382. A selection of 19 rotors is available for the UNIVERSAL 320/320 R centrifuges. With frequency drive, microprocessor control, impulse key for short centrifuging, quick-entry foil keypad and digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. Ten complete running programmes can be stored and recalled. Temperature in the refrigerated UNIVERSAL 320 R is adjustable within a range of -20 to +40°C.

##### Specifications

Max. RCF:	21382xg
Max. speed:	15000rpm
Max. capacity:	4 x 100ml/32 x 15ml
Cooling temperature UNIVERSAL 320 R:	-20 to +40°C
Timer:	1sec to 99min : 59 sec, continuous run, short cycle mode (impulse key)

Power consumption	
UNIVERSAL 320:	400W
UNIVERSAL 320 R:	800W
Dimensions (WxDxH)	
UNIVERSAL 320:	395 x 520 x 346mm
UNIVERSAL 320 R:	401 x 695 x 346mm
Weight	
UNIVERSAL 320:	approx. 31kg
UNIVERSAL 320 R:	approx. 53kg
Power supply:	200 - 240V, 50/60Hz

1



9.943 121

2



Type	Description	PK	Cat. No.
UNIVERSAL 320	without rotor	1	9.943 120
UNIVERSAL 320 R	without rotor, with refrigeration	1	9.943 121 <b>1</b>
1494	Swing-out rotor for max. 4 x 100ml without carriers	1	9.943 399
1624	Swing-out rotor for max. 4 x 100ml or 4 slide preparations without carriers	1	9.943 386

Additional accessories on request.

#### 4 Benchtop centrifuges ROTINA 380/380 R

**(NEW!)**

Hettich

High-performance, benchtop centrifuges with a comprehensive range of accessories especially for applications in the fields of diagnostics, genetics and microbiology. Both models offer a choice of 11 rotors. With frequency drive, microprocessor control, impulse key for short centrifuging and powered lid locking. The advanced C control panel significantly facilitates daily laboratory routine. Parameter selection is done via the use of symbol keys. Values are set with the control knob, and recorded by pressing the Start key. Digital display. As necessary, a switch key enables entry/display of rpm (speed) or rcf. With 98 programmable memories. Temperature within the chamber of the refrigerated ROTINA 380 R is controllable within a range of -20 to +40°C. The temperature can also be set in degrees Fahrenheit.

##### Specifications

Max. RCF:	24400xg
Max. speed:	15000rpm
Max. capacity:	4 x 290ml
Cooling temperature ROTINA 380 R:	-20 to +40°C
Timer:	1sec to 99min : 59sec, continuous run, short cycle mode (impulse key)

Power consumption	
ROTINA 380:	650 W
ROTINA 380 R:	1150 W
Dimensions (WxDxH)	
ROTINA 380:	457 x 600 x 418mm
ROTINA 380 R:	457 x 750 x 418mm
Weight	
ROTINA 380:	approx. 51kg
ROTINA 380 R:	approx. 81kg
Power supply:	200 - 240V, 50/60Hz

3



9.943 129

4



Type	Description	PK	Cat. No.
ROTINA 380	without rotor	1	9.943 129 <b>3</b>
ROTINA 380 R	without rotor, with refrigeration	1	9.943 130
1754	Swing-out rotor for max. 4 x 290ml without carriers	1	9.943 467
1752	Round carrier 290ml for swing-out rotor 1754	1	9.943 468

Additional accessories on request.

1



9.943 126

### 2 Benchtop centrifuges ROTINA 420/420 R



Hettich

The compact benchtop centrifuges are designed both for high sample throughput and high sample volumes. With a max. capacity of 4 x 600ml, 140 blood collection tubes or 16 microtitre plates they are ideal for applications in clinical chemistry, in biotechnology and in life science research facilities. With frequency drive, microprocessor control and impulse key for short centrifuging and motorised lid locking. The advanced C control panel is ideal for daily routine tasks in the laboratory. Parameter selection is achieved via the use of symbol keys. Values are set with the control knob, and recorded by pressing the Start key. Digital display. 98 programmable memories. Temperature in the refrigerated ROTINA 420 R is adjustable within a range of -20 to +40°C. The temperature can also be set in degrees Fahrenheit.

#### Specifications

Max. RCF:	24400xg
Max. speed:	15000rpm
Max. capacity:	4 x 600ml
Cooling temperature ROTINA 420 R:	-20 to +40°C
Timer:	1sec to 99h : 59min : 59sec, continuous run, short cycle mode
Power consumption ROTINA 420/420 R:	870W/1500W
Dimensions (WxDxH) ROTINA 420/420 R:	506 x 650 x 423mm/713 x 654 x 423mm
Weight ROTINA 420/420 R:	approx. 75kg/approx. 108kg
Power supply:	200 - 240V, 50/60Hz

2



Type	Description	PK	Cat. No.
ROTINA 420	without rotor	1	9.943 125
ROTINA 420 R	without rotor, with refrigeration	1	9.943 126 1
4784-A	Swing-out rotor for max. 4 x 600ml or 16 microtitre plates without carriers	1	9.943 475

Additional accessories on request.

3



9.943 150

### Centrifuges ROTANTA 460 series



Hettich

Developed for large volumes, the model offers frequency drive, microprocessor control, impulse key for short centrifuging, and powered lid locking. As necessary, a switch key enables entry/display of RPM (speed) or RCF. All ROTANTA 460 models feature the extended C control panel, which provides up to 98 programmable memories. Temperature in the refrigerated ROTANTA 460 R is controllable within a range of -20°C to +40°C. The refrigerated ROTANTA 460 R can also be supplied in an underbench version or as a floorstanding model.

**Without rotors. Please order separately.**

#### Specifications

Max. RCF:	24400xg
Max. speed range:	15000rpm
Max. capacity:	4 x 750ml
Cooling temperature Rotanta 460 R:	-20 to +40°C
Timer:	1sec to 99h : 59min : 59sec, continuous run, short cycle mode
Power consumption	
ROTANTA 460/ROTANTA 460 R,RC,RF:	1000W/1600W
Dimensions (WxDxH)	
ROTANTA 460:	554 x 706 x 456mm
ROTANTA 460 R:	770 x 706 x 456mm
ROTANTA 460 RC:	554 x 697 x 683mm
ROTANTA 460 RF:	554 x 697 x 961mm
Weight	
ROTANTA 460:	approx. 101kg
ROTANTA 460 R,RC:	approx. 141kg
ROTANTA 460 RF:	approx. 164kg
Power supply:	200 - 240V, 50/60Hz

4



9.943 474

Type	Description	PK	Cat. No.
ROTANTA 460	Benchtop centrifuge, classic	1	9.943 150 3
ROTANTA 460 R	Benchtop centrifuge, cooled	1	9.943 152
ROTANTA 460 RC	Underbench centrifuge, cooled	1	9.943 154
ROTANTA 460 RF	Floorstanding centrifuge, cooled	1	9.943 155
5699	Swing-out rotor for max. 4 x 750ml or 4 blood bag systems 450ml	1	9.943 474 4
4880	Round carrier with single-hand clamp lock for max. 750 ml for swing-out rotor 5699	1	9.943 486
4883	Lid with bio-containment for round carrier 4880	1	9.943 487

Additional accessories on request.

Microlitre centrifuge Z 216 M/Z 216 MK

The Z 216 M and Z 216 MK are setting new standards in this centrifuge class. Capable of centrifuging up to 44 x 1.5/2.0 ml at each run. *Hermle*  
Due to their compact design and quiet running properties they are fitting perfectly in their working area.  
The powerful refrigeration system of Z 216 MK keeps samples at temperatures as low as 4°C during a continuous run at 20000 xg.

- Specifications:
- Maintenance-free induction drive
  - Microprocessor with large LCD Display
  - Motor driven lid lock
  - Active imbalance-identification and cut off
  - Standstill cooling
  - Audible signal at the end of each run
  - Rapid acceleration and deceleration (see rotor data)
  - Lowest sample temperature 4°C at 20000xg
  - Noise level < 60 dBA at 20000xg
  - Extremely compact with a space saving footprint
  - Quick access to samples with a snap on lid
  - Aerosol tight rotor option
  - Manufactured according to international safety regulations, i.e. IEC 61010
  - Distinct control panel

Specifications	Z 216 M/Z 216 MK
Max. RCF:	21380xg
Max. speed:	15000rpm
Max. capacity:	44 x 1.5/2.0ml
Cooling temperature Z 216 MK:	-20 to 40°C
Timer:	59min 50sec/10sec increments 99h 59min/1min increments
Power consumption:	560W
Dimensions (WxDxH):	280 x 390 x 290mm/280 x 550 x 290mm
Weight:	17kg/35kg
Power supply:	230V, 50/60Hz

Description	PK	Cat. No.
Microlitre centrifuge Z 216 M	1	7.660 217 <sup>1</sup>
Refrigerated microlitre centrifuge Z 216 MK	1	6.231 520
Refrigerated microlitre centrifuge Z 216 MK incl. angle rotor	1	6.230 074
Microlitre centrifuge Z 216 MK incl. rotor V14, 24 x 1,5/2,0 ml cooled	1	9.945 933
Angle rotor 24 x 1.5/2.0ml	1	9.945 715
Angle rotor 24 x 1.5/2.0ml, hermetically sealed	1	9.945 716
Angle rotor 30 x 1.5/2.0ml, hermetically sealed	1	9.945 717
Angle rotor 12 x 5ml, closable	1	9.945 922
Angle rotor for 4 x 8 PCR Stripes	1	9.945 718 <sup>2</sup>
Angle rotor for 12 x 5ml reaction vessels, closable	1	7.660 218 <sup>3</sup>

1



7.660 217

2



9.945 718

3



7.660 218



## Separating, centrifuging/Benchtop centrifuges

1



6.240 037

### Refrigerated high speed centrifuge Z 32 HK

With a wide range of accessories, the Z 32 HK high speed centrifuge is applicable in a wide variety of research settings. In spite of the remarkably small footprint, the Z 32 HK features a powerful refrigeration system capable of maintaining cool sample temperatures even at maximum speed.

Hermle

#### Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection immediately upon rotor installation
- Active imbalance identification and cut off rotor specific
- Imbalance tolerant drive
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Quick and easy rotor exchange
- Noise level under 60dBA at max. speed
- Distinct control panel

2



9.945 915

#### Specifications

Max. RCF:	38012 x g
Max. speed:	20000rpm
Max. capacity:	4 x 100ml
Cooling temperature:	-20 to +40°C in 1°C increments
Timer:	59min 50sec/10sec increments 99h 59min/1 min increments
Power consumption:	1200W
Dimensions (WxDxH):	400 x 700 x 360mm
Weight:	71kg
Power supply:	230V, 50/60Hz

Description	PK	Cat. No.
Refrigerated High Speed Centrifuge Z 32 HK	1	<b>6.240 037 1</b>
Angle rotor for max. 6 x 85ml	1	<b>9.945 915 2</b>
Angle rotor for max. 20 x 10ml	1	<b>9.945 916</b>

For further accessories see Z 326/Z326K.

3



9.945 737

### Compact centrifuge Z 206 A

Compact centrifuge for physicians and clinical laboratories.

Hermle

The Z 206 A accepts up to 12 x 15ml conical and round bottom tubes. For tubes with smaller dimensions we offer several adapters. For larger volumes we offer an angle rotor for 6 x 50ml conical and round bottom tubes.

- Microprocessor with LCD display
- Electrical lid lock
- Pre-selection of the rotor type
- Active imbalance-identification and cut off
- Manufactured according to international safety regulations, i.e. IEC 61010
- Noise level under 60dBA at max. speed
- A large variety of rotors and accessoires
- Easy change of rotors
- Distinct control panel

4



9.945 728

#### Specifications

Max. RCF:	4180xg
Max. speed:	6000rpm
Max. capacity:	6 x 50ml
Timer:	59min 50sec/10sec increments 99h 59min/1min increments
Power consumption:	100W
Dimensions (WxDxH):	280 x 370 x 260mm
Weight:	15kg
Power supply:	230V, 50/60Hz

Description	PK	Cat. No.
Compact centrifuge Z 206 A	1	<b>9.945 737 3</b>
Compact centrifuge Z 206 A incl. angle rotor 12x15ml	1	<b>9.945 738</b>
Angle rotor 12 x 15ml	1	<b>9.945 728 4</b>
Angle rotor 6 x 50ml	1	<b>9.945 729</b>
Angle rotor 18 x 1.5/2.0ml	1	<b>9.945 739</b>
Swing out rotor 6 x 5ml	1	<b>9.945 740 5</b>

5



9.945 740



## 6. Distillation, separation, filtration

### Separating, centrifuging/Benchtop centrifuges

#### Universal centrifuges Z 326/Z 326 K

Universal laboratory centrifuge for medical laboratory, from the large volume (4 x 100ml) to reaction vessels.

Hermle

Both the table top centrifuge Z 326 and the refrigerated table top centrifuge Z 326 K offer a wide assortment of rotor options, making them ideal for a wide variety of research applications. Rotor exchange between swing out, micro, or high volume angled rotors is very simple and can take place in a matter of seconds. The Z 326 K includes the refrigeration system on the back side of the unit, optimised for the lab bench at only 40cm wide.

#### Specifications:

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and cut off (rotor specific)
- Imbalance tolerant drive
- CFC free refrigeration system (Z 326 K)
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Rotor exchange is easy to handle
- Noise level under 60dBA at max. speed
- Optimized airflow system keeps the samples cool (Z 326)
- Distinct control panel

#### Specifications

Max. RCF:	23545xg
Max. speed:	18000rpm
Max. capacity:	4 x 100ml
Cooling temperature Z 326 K:	-20 to +40°C in 1°C increments
Timer:	59min 50sec/10sec increments 99h 59min/1min increments

#### Power consumption

Z 326:	455W
Z 326 K:	660W

#### Dimensions (WxDxH)

Z 326:	400 x 480 x 360mm
Z 326 K:	400 x 700 x 360mm

#### Weight

Z 326:	43 kg
Z 326 K:	60 kg
Power supply:	230V, 50/60Hz

1



6.241 114

2



6.238 614

3



6.241 887

4



9.945 910

5



6.238 615

Description	PK	Cat. No.
Universal centrifuges Z 326	1	6.241 114 1
Universal centrifuges Z 326 K	1	6.238 613
Swing out Rotor, 4 place	1	6.238 614 2
Bucket 1 x 100ml	2	9.945 750
Bucket 1 x 50ml Falcon	2	9.945 752
Bucket 2 x 15ml Falcon	2	9.945 753
Bucket 10 x 1.5ml	2	9.945 771
Swing out Rotor, 4 place	1	6.241 887 3
Bucket 2 x 50ml Falcon	2	9.945 772
Bucket 3 x 15ml Falcon	2	9.945 773
Bucket hermetic for tube racks	2	6.241 888
Tube racks 1 x 100ml	2	6.240 595
Tube racks 1 x 50ml Falcon	2	6.902 309
Tube racks 2 x 15ml Falcon	2	6.902 310
Tube racks 7 x 5 to 7ml	2	9.945 903
Tube racks 5 x 1.5ml	2	6.902 308
Swing out rotor 2 x 3 Microtiterplates	1	9.945 910 4
Angle rotor for max. 12 x 15ml	1	9.945 912
Angle rotor for max. 6 x 50ml	1	9.945 913
Angle rotor for max. 6 x 85ml	1	6.240 038
Angle rotor for max. 24 x 1.5/2.0ml	1	6.238 615 5
Angle rotor for 4 x 8 PCR Stripes	1	9.945 919

## Separating, centrifuging/Centrifuge tubes



### 1 Centrifuge tubes, round bottom, DURAN®

To DIN 58970 part 2. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.  
Maximum loading: 4000xg rcf.

DURAN Group

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
6	12	100	1	9.315 010
12	16	100	1	9.315 011
25	24	100	1	9.315 014
50	34	100	1	9.315 017
80*	40	115	1	9.315 024
80	44	100	1	9.315 026
250*	56	147	1	9.315 036

\* Not to DIN.



### 2 Centrifuge tubes, conical, DURAN®

Autoclavable. Rimless, with conical base. Maximum loading: 4000xg rcf.

DURAN Group

Volume ml	Diam. mm	Height mm	Angle	PK	Cat. No.
12	16	100	30	1	9.315 509
25	24	100	60	1	9.315 514
50	34	100	60	1	9.315 517



7.920 120

6.803 325

### High speed centrifuge tube, borosilicate glass

Borosilicate glass. The tubes have been chemically strengthened to achieve a greater mechanical strength than standard borosilicate centrifuge tubes. These tubes can be centrifuged up to 13.100 RCF when used with an accessory rubber adapter sleeve in a 50ml rotor cavity. They can withstand temperatures up to 300°C. Autoclavable.

Volume ml	Diam. mm	Height mm	Description	PK	Cat. No.
15	18	102	without rim	6	6.803 323
30	24	106	without rim	6	6.093 022
15	18	102	screw thread	6	7.920 120 3
30	24	106	screw thread	6	6.234 247
			Rubber adapter, 15ml	2	6.803 324
			Rubber adapter, 30ml	2	6.803 325 4



### 5 Centrifuge tubes, glass, round bottom, graduated, DURAN®

In white enamel, rimless. Maximum loading: 3500xg rcf.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
10 - 15	17	98	1	9.315 237
10 - 15	17	107	1	9.315 240
25	25	100	1	9.315 245



### 6 7 Centrifuge tubes, round bottom, AR glass®

Round bottom. Graduated or ungraduated. Maximum loading: 3500xg rcf.

Volume ml	Diam. mm	Height mm	Graduations	PK	Cat. No.
10 - 15	17	98	no	1	9.315 201
10 - 15	17	107	no	1	9.315 203
10 - 15	17	98	yes	1	9.315 217
10 - 15	17	107	yes	1	9.315 220
25	25	100	yes	1	9.315 225
50 - 55	35	98	no	1	9.315 207
70 - 100	40	115	no	1	9.315 210



6. Distillation, separation, filtration  
Separating, centrifuging/Centrifuge tubes

Centrifuge tubes, AR glass®

Wall thickness approx. 1mm. Maximum loading: 3500xg rcf. Outer diameter approx. 17mm. Graduation (9.315 416) 0.1ml.

BRAND

Volume ml	Height mm	Base	Neck	Graduations	PK	Cat. No.
11	98	conical, short taper	rimless	-	1	9.315 420 1
11	98	conical, short taper	rimless	-	100	9.315 423
13	98	round	rimless	-	100	9.315 421
15	113	conical, long taper	beaded rim	-	100	9.315 412
15	113	conical, long taper	beaded rim	0 - 15, white	1	9.315 416 2

1



9.315 420

2



9.315 416

3 ASTM centrifuge tube, cylindrical, with conical base, borosilicate glass 3.3



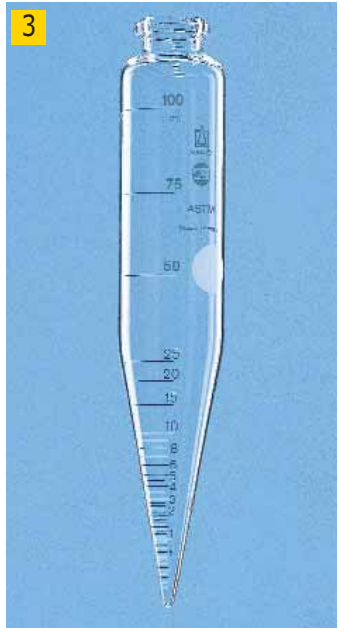
BLAUBRAND®. Cylindrical, with conical base. Graduations and labelling in high-contrast blue enamel. Maximum loading 700 xg rcf. Internal diam. neck approx. 17 mm.

BRAND

Graduated, ml:	In subdivisions, ml:
0 to 0.5	0.05
0.5 to 2	0.10
2 to 3	0.20
3 to 5	0.50
5 to 10	1.00
10 to 25	5.00
25 to 100	25.0

Capacity ml	Length mm	Description	PK	Cat. No.
100	203	acc. to ASTM D 91	1	9.315 810
100	167	former standard ASTM D 96	1	9.315 820

3



4 ASTM centrifuge tube, pear-shaped with cylindrical base, borosilicate glass 3.3

BLAUBRAND®. Pear-shaped with cylindrical base. Former standard ASTM D 96. Capacity 100ml. Graduations and labelling in high-contrast blue enamel. Maximum loading 700xg rcf. Internal diam. neck approx. 17 mm.

BRAND

Graduated, ml:	In subdivisions, ml:
0 to 1.5	0.10
1.5 to 3	0.50
3 to 5	0.50
5 to 10	1.00
10 to 25	5.00
25 to 100	25.0

Capacity ml	PK	Cat. No.
100	1	9.315 815

4





### 1 LLG-Microcentrifuge tubes, PP

LLG Microtubes cover standard volumes for a variety of sample tests. They are available in 0.5ml, 1.5ml and 2.0ml volumes. These standard Microtubes withstand high centrifugal forces, are temperature and chemical-resistant and guaranteed against leaks. An innovative and modern new generation of Microtubes with new features. Perfect sealing qualities, excellent chemical stability and optimal construction materials guarantee even better resistance to centrifugal and chemical forces. Easy to open and to close thanks to the improved lid geometry. For visual volume control the 1.5ml tubes are equipped with graduations at 0.5ml, 1.0ml and 1.5ml. The 2.0ml tubes have graduations at 0.5ml, 1.0ml, 1.5ml and 2.0ml. The 0.5ml tubes are without graduations. Certified DNase-, RNase- and pyrogen free.

Non sterile, clear, in bags. Certified free of DNase, RNase, suitable for microbiology. Guaranteed metal-free.

#### Specifications

##### Autoclavability

Temperature: 121°C (250°F)  
Pressure: 1.05 bar or 15 psig (pounds)  
Time: 20 min or less

##### Centrifugation

Fixed angle rotor: 25000xg  
Swing out rotor: 70000xg

Volume ml	Form	PK	Cat. No.
0.5	conical	1000	9.409 023
1.5	conical	1000	9.409 024
2.0	round	1000	9.409 025



### 2 LLG-Centrifuge tubes, PP

Polypropylene tubes with very good thermal, mechanical and chemical stability. Sterile tubes fitted with screw-on closure. Packed in boxes or bags. With graduations and labelling area. Cytotoxicity-free, DNase/RNase- and human DNA-free.

Centrifugation capacity (Max. RCF): 6000 x g

Capacity ml	Diam. mm	Height mm	Form	Description	PK	Cat. No.
15	17.0	120	conical	sterile, single packed	50	9.316 062
15	17.0	120	conical	non-sterile	500	9.316 063
50	30.0	120	conical	sterile, single packed	50	9.316 064
50	30.0	120	conical	non-sterile	500	9.316 065
50	30.0	120	with rim	sterile, single packed	50	9.316 067
50	30.0	120	with rim	non-sterile	50	4.008 506

### 3 4 5 LLG-Test and centrifuge tubes rimmed, PS or PP



- Made of ultra clear virgin polypropylene or virgin polystyrene
- Polystyrene tubes are transparent. Polypropylene tubes are opaque, break-resistant
- Tubes with cap are ethylene oxide sterilized
- With label

LLG-Dual-Position Caps for test- and centrifuge tubes, PE

- For culture tubes with an O.D. of 12 mm and 17 mm
- 2 locking positions possible
- Closed, but gas exchange is still possible for aerobic growth conditions
- Hermetically sealed for anaerobic growth conditions, for storage or despatch of samples or for centrifugation

Capacity ml	Diam. mm	Height mm	Description	Material	Max. rcf	Max. temp. °C	PK	Cat. No.
4.0	12.0	75	with rim	PS	1400	80	500	6.265 657
4.0	12.0	75	with rim	PP	3000	120	500	6.265 658
12.0	17.0	100	with rim	PS	3000	80	250	6.265 659
12.0	17.0	100	with rim	PP	5500	120	250	6.265 660
4.0	12.0	75	with dual-position-cap, sterilized	PS	1400	80	500	6.265 661
4.0	12.0	75	with dual-position-cap, sterilized	PP	3000	120	500	6.265 662
12.0	17.0	100	with dual-position-cap, sterilized	PS	3000	80	500	6.265 663
12.0	17.0	100	with dual-position-cap, sterilized	PP	5500	120	500	6.265 664
	12.0		dual-position-cap	PE	-		1000	6.265 665
	17.0		dual-position-cap	PE	-		1000	6.265 666



## 6. Distillation, separation, filtration

### Separating, centrifuging/Centrifuge tubes

#### 1 Test tubes and centrifuge tubes, PP

Round bottom.

Greiner Bio-One

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
4.0	12.0	55	3600	<b>9.400 615</b>
5.0	12.0	75	2000	<b>9.400 632</b>
12.0	16.0	100	1600	<b>9.400 664</b>
14.0	17.0	100	1500	<b>9.400 665</b>



#### 2 Test tubes and centrifuge tubes, PS

Round or conical bottom.

Capacity ml	Diam. mm	Height mm	Description	PK	Cat. No.
2.0	10.5	40	round bottom	3000	<b>9.400 505</b>
3.5	11.0	63	round bottom	3000	<b>9.400 520</b>
4.0	11.0	70	round bottom	2880	<b>9.400 530</b>
4.0	12.0	55	round bottom	3600	<b>6.510 405</b>
5.0	12.0	75	round bottom	2000	<b>9.400 532</b>
10.0	14.0	100	round bottom	1400	<b>9.400 562</b>
12.0	16.0	100	round bottom	1600	<b>9.400 564</b>
14.0	17.0	100	round bottom	1500	<b>9.400 565</b>
20.0	16.0	152	round bottom	1500	<b>9.400 590</b>
4.5	12.0	75	conical bottom	3600	<b>9.400 901</b>
13.0	16.5	103	conical bottom	1500	<b>9.400 908</b>



#### Graduated centrifuge tubes, conical, PP or PMP

Autoclavable. PP tubes can withstand temperatures up to +120°C. PMP (TPX®) tubes can withstand temperatures up to +170°C. Rimmed. High chemical resistance. Good transparency, especially when in contact with liquids. Cannot be used with naked flame. Can be used as conventional test tubes.

Kartell

Capacity ml	Diam. mm	Height mm	Grad. ml	Material	PK	Cat. No.
10	16	108		PP	500	<b>9.315 832 3</b>
15	18	120		PP	500	<b>9.315 833</b>
10	16	107	0.10	PP	100	<b>6.233 811 4</b>
15	18	118	0.20	PP	100	<b>9.315 834</b>
10	16	107	0.10	PMP (TPX®)	50	<b>6.075 746 5</b>
15	18	118	0.20	PMP (TPX®)	50	<b>6.231 946</b>



9.315 832



6.233 811



6.075 746

#### 6 Centrifuge tubes, cylindrical, PP

Translucent. PP. Autoclavable. Can withstand temperatures up to +120°C. Rimmed. High chemical resistance. Cannot be used with naked flame. Can also be used as conventional test tubes.

Kartell

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
7	12	100.0	100	<b>9.315 830</b>
16	17	101.0	500	<b>6.204 878</b>
31	24	93.0	50	<b>6.205 839</b>
48	30	104.0	25	<b>6.205 674</b>
70	35	99.5	20	<b>9.315 831</b>
110	40	119.0	25	<b>6.205 169</b>



➔ For stoppers, please see page 28.



## Separating, centrifuging/Centrifuge tubes



1

### 1 Centrifuge tubes, PP

Polypropylene tubes with very good thermal, mechanical and chemical stability. Fitted with screw-on closure. Packed in boxes or bags. With graduations and labelling area. Tubes are sterile, cytotoxicity-free, DNase/RNase- and human DNA-free.

Greiner Bio-One

#### Specifications:

Centrifugation capacity (15 - 50 ml):

3215 x g/4500 rpm in swing out rotors

8965 x g/9000 rpm in fixed angle rotors

Capacity ml	Diam. mm	Height mm	Form	PK	Cat. No.
15	17.0	120	conical	50	9.380 423
15	17.0	120	conical	500	7.380 423
15	17.0	120	conical	1000	7.053 718
50	30.0	115	conical	20	9.380 421
50	30.0	115	conical	500	7.380 421
50	30.0	115	conical	300	6.049 748
50	30.0	115	conical, with rim	25	9.380 422
50	30.0	115	conical, with rim	450	7.380 422
50	30.0	115	conical, with rim	300	6.054 664



2

### 2 3 Centrifuge tubes, conical tubes, PP/PE-HD

New and improved conical tubes with the largest writing area on the market for increased traceability with additional space for labeling information. Recyclable plastic rack reduces waste in the lab. New conical tubes have higher RCF ratings, which enable more applications from low speed to super speed centrifugation. They meet USP class VI requirements and are non-cytotoxic, non-pyrogenic and RNase/DNase free. Graduated, leak proof and sterile (SAL 10<sup>-6</sup>)

Thermo Scientific

Material tubes: PP

Material caps: PE-HD



3

Capacity ml	Diam. mm	Height mm	Max. rcf	Description	PK	Cat. No.
15	17	120	10500 x g*	Bulk	500	9.401 430
15	17	120	10500 x g*	Racked	500	9.401 431
50	30	115	17000 x g*	Bulk	500	9.401 432
50	30	115	17000 x g*	Racked	300	9.401 433

\* When fully supported by conical rotor cavity or conical adaptor. Note the maximum speeds listed are guidelines only. These speeds have been achieved in reliability tests based on sedimentation of 1.2 specific gravity fluid at 18°C.



4

### 4 Centrifuge tubes, plastic, round bottom, PC, graduated

Transparent. PC. Rimless, with moulded graduations.

BRAND

Slightly yellowish in colour. Round bottom. For use with loads up to 20000xg rcf.

Note: the strength of Polycarbonate is reduced when it is autoclaved or cleaned using alkaline detergents.

Volume ml	Diam. mm	Height mm	Grad. ml	PK	Cat. No.
50	35	99	1	1	9.315 329
100	41	115	2	1	9.315 339
100	45	98	2	1	9.315 340





6. Distillation, separation, filtration  
Separating, centrifuging/Centrifuge tubes

Eppendorf Tubes® 5.0 ml, PP



Eppendorf

- Ergonomic operation: Simple, practical and ergonomic single-hand operation. Large labelling area.
- Lid design: Hinged lid for minimized sample evaporation during storage and incubation in a wide range of temperatures from -86°C to 80°C
- Material: Exceptionally high-quality, transparent polypropylene, free of plasticizers, biocides or mold release agents, for reliable test results
- Certified purity: Available in lot-tested and certified Eppendorf Quality, PCR clean, Sterile and Eppendorf Biopur® purity levels
- Centrifugation safety: Maximum safety and stability for centrifugation up to 25 000 × g and fast and efficient protocols.
- Conical shape: Compatible with accessories for conical 15 mL tubes - many existing adapters and racks can be used.
- Sample recovery: Available in Eppendorf LoBind® material for maximum recovery of valuable samples

From 80°C on, please use the Tube Clip opener Cat. No. 9.409 294

Description	Package contents	PK	Cat. No.
Eppendorf Tubes® 5.0 mL, Eppendorf Quality™	2 bags of 100	200	9.409 277 1
Eppendorf Tubes® 5.0 mL, PCR clean	2 bags of 100	200	9.409 278
Eppendorf Tubes® 5.0 mL, Sterile	10 bags of 20	200	9.409 279
Eppendorf Tubes® 5.0 mL, Biopur®	bag of 50, single packed	50	9.409 288
Eppendorf Protein LoBind Tube, PCR clean	2 bags of 50	100	9.409 289
Eppendorf DNA LoBind Tube, PCR clean	4 bags of 50	200	9.409 290
Eppendorf Tubes® 5.0 mL, Eppendorf Quality™, amber (light protection)	2 bags of 100	200	6.265 214 2
Tube Clip, Eppendorf Quality™		10	9.409 294 3

1



9.409 277

2



6.265 214

3



9.409 294

4 Tube Rack for 5ml microcentrifuge tubes, PP



Bel-Art Products

Designed specifically for 40 x 5ml microcentrifuge tubes this rack will also accommodate other tubes with a diameter of 13 to 16mm. Made of durable and corrosion resistant white polypropylene. End plates have handles for easy transport and stacking  
Steam autoclavable at 121°C  
Dimensions (L x W x H): 260 x 113 x 105mm  
Rows: 4 x 10

No. of tubes	For tubes diam. mm	PK	Cat. No.
40	13 - 16mm	1	9.194 026

4



5 Centrifuge tubes Oak Ridge Typ 3114, FEP

Teflon® FEP with Tefzel® ETFE screw cap. Resistant to all acids, bases and solvents. Autoclavable. Operating temperature range -100 to +150°C.  
Can be used brim-full in refrigerated centrifuges at up to 50000xg rcf. Leak-proof. Accessory sealing cap assemblies are available for all sizes.

Thermo Scientific

Type	Volume ml	Diam. mm	Height mm	PK	Cat. No.
3114	10	16.0	81.5	1	9.315 701
3114	30	25.5	93.7	1	9.315 702
3114	50*	28.8	107.7	1	9.315 703

\* Capacity: 46ml to the brim.

Teflon® and Tefzel® are a registered trademark of DuPont.

5



## Separating, centrifuging/Centrifuge tubes



### 1 Centrifuge tubes Oak Ridge Typ 3115, PSU

Transparent. Polysulphone (PSU) with PP screw cap. As stable and robust as PC test-tubes, but considerably more resistant to acids and alkalis. Autoclavable. Can be used in refrigerated or ambient centrifuges at up to 50000xg rcf. Accessory sealing cap assemblies are available for all sizes. Notes: If autoclaving, the tubes must be filled to 80% of their total capacity. Polysulphone must not be used with Tween, as this causes hairline cracks to form.

Thermo Scientific

Type	Volume ml	Diam. mm	Height mm	PK	Cat. No.
3115	30	25.7	94.5	1	9.315 708
3115	50*	29.0	107.7	1	9.315 709

\* Capacity: 43ml to the brim.



### 2 Nalgene™ Oak-Ridge centrifuge tubes Type 3118, PC

Transparent. PC with PP screw cap. Can be used in suitable refrigerated or ambient centrifuges at up to 50.000xg rcf. Autoclavable. Accessory sealing cap assemblies are available for 10ml, 30ml and 50ml sizes.

Thermo Scientific

Type	Capacity ml	Diam. mm	Height mm	PK	Cat. No.
3118	10	16.1	81.7	1	9.315 691
3118	28	25.4	101.8	1	9.315 692
3118	30	25.7	94.5	1	9.315 693
3118	50*	28.8	107.0	1	9.315 694
3118	85**	38.2	105.7	1	9.315 695

\* Capacity: 43ml to the brim.

\*\*Capacity: 81ml to the brim.



### 3 Nalgene™ Oak-Ridge centrifuge tubes Type 3119, PP-copolymer

PP-copolymer with PP screw cap. PPCO is more resistant to chemicals than PC. Autoclavable. When wet, the translucent test-tube enables observation of the contents. Can be used in refrigerated and unrefrigerated centrifuges at up to 50.000xg rcf. Accessory sealing cap assemblies are available for all sizes.

Thermo Scientific

Type	Volume ml	Diam. mm	Height mm	PK	Cat. No.
3119	10	16.0	81.4	1	9.315 711
3119	28	25.4	101.9	1	9.315 712
3119	30	25.5	94.3	1	9.315 713
3119	50*	28.8	106.7	1	9.315 714

\* Capacity: 42ml to the brim.



### 4 Centrifuge bottles Typ 3120, PP-copolymer

PP-copolymer with PP screw cap. Autoclavable.

Thermo Scientific

Type	Volume ml	Diam. mm	Height mm	Max. rcf	PK	Cat. No.
3120	250	61.8	127.7	13,200*	1	9.315 716
3120	500	69.5	170.2	13,700	1	9.315 717
3120	500	73.8	169.8	4,800	1	9.315 720
3120	1000	97.5	184.5	7,100	1	9.315 718
3120	1000	97.7	179.0	7,100	1	9.315 719

\* Up to 27500xg if using the sealing screw cap 9.315 734.

## 6. Distillation, separation, filtration

### Separating, centrifuging/Centrifuge tubes

#### 1 Centrifuge bottles Typ 3122, PC

PC with PP screw cap. Crystal clear. Good mechanical strength. Autoclavable. Leak-proof even at low speeds.

*Thermo Scientific*

In order to ensure that the system is leak-proof even at high speeds and when centrifuging dangerous substances, the 250ml and 1000ml sizes must be used in conjunction with sealing screw cap sets.

Type	Volume ml	Diam. mm	Height mm	Max. rcf	PK	Cat. No.
3122	250	61.8	127.6	27.500	1	9.315 721
3122	500	69.5	169.6	13.700	1	9.315 723
3122	1000	97.6	188.4	7.100	1	9.315 724
3122	1000	98.1	180.2	7.100	1	9.315 725



#### 2 Sealing cap assemblies Typ DS 3131, PP

PP screw cap with Tefzel® ETFE plug liner and viton O-ring. Leak-proof at recommended maximum speed and rcf for tubes. Suitable for working with aggressive chemicals.

*Thermo Scientific*

The 38mm assembly has a PP shoulder reinforcement ring to prevent collapsing of the 250ml bottles.

Type	For tubes ml	Screw cap diam. mm	PK	Cat. No.
DS3131	30	20	1	9.315 732
DS3131	50	24	1	9.315 733
DS3131	250	38	1	9.315 734

Tefzel® is registered trademark of DuPont.



#### 3 Sealing cap assemblies with silicone seal Typ DS 3132, PP

For Oak Ridge centrifuge test tubes made of PP, PC and polysulphone.

*Thermo Scientific*

Type	For tubes ml	Screw cap diam. mm	PK	Cat. No.
DS3132	28 / 30	20	2	9.315 738
DS3132	50	24	2	9.315 739
DS3132	250	58	2	9.315 740
DS3132	500 / 1000	63	2	9.315 741



#### 4 Wide-mouth centrifuge bottles Typ 3141, PP-copolymer

PP-copolymer with sealing screw cap. Autoclavable.

*Thermo Scientific*

Type	Volume ml	Diam. mm	Height mm	Max. rcf x g	PK	Cat. No.
3141	250	60.7	133.4	27500	1	9.315 763
3141	450	69.5	160.0	13700	1	9.315 764



#### 5 Centrifuge Bottles with Sealing Cap , SuperSpeed, Types 3140, 3141

Designed to boost productivity and pellet recovery in super speed, large volume gross separation applications.

*Thermo Scientific*

Process one full Litre in each window-clear bottle at speeds up to 15810xg. Graduated, wide-mouth bottle simplifies decanting, re-suspensions and pellet removal. Smooth inner walls are less likely to shear delicate cells. Ideal for bacterial, yeast and tissue isolations. Improve viral harvesting in vaccine production. Reduce shearing in mammalian culture separations. PC offers excellent clarity. Ergonomic design facilitates loading, recovery and storage of samples.

Recommended operating temperature range is from 4°C to 22°C; storage to -70°C. Brim capacity is 1.055ml.

Nominal Dimensions (Diam. x H): 96.52 x 195.58mm. Before autoclaving, just set closure on top of bottles without engaging the threads. For proper performance these bottles must be filled to at least 80% of the total capacity.



Type	Capacity ml	Material	Diam. mm	Height mm	PK	Cat. No.
3140	1000	PC	98.0	195.0	1	9.315 729
3141	1000	PPCO	97.5	195.3	1	6.236 915

## Filtration/Filter paper, qualitative

## LLG-Filter paper, qualitative grades

Made from 100% cellulose.

Ash content 0.06%.

Filtration speed according to DIN 53137.

Capacity of separation according to DIN 53135.



## 1 LLG-Qualitative filter paper, circles

Fast

Diam. mm	Filtration time secs.	PK	Cat. No.
90	10	100	9.045 830
110	10	100	9.045 831
125	10	100	9.045 832
150	10	100	9.045 833
185	10	100	9.045 834



## 2 LLG-Qualitative filter paper, circles



Medium speed

Diam. mm	Filtration time secs.	PK	Cat. No.
42.5	50	100	9.045 820
90.0	50	100	9.045 821
110.0	50	100	9.045 822
125.0	50	100	7.970 266
150.0	50	100	7.970 269
185.0	50	100	6.242 668
240.0	50	100	6.242 631
42.5	88	100	9.045 800
47.0	88	100	9.045 801
55.0	88	100	9.045 802
70.0	88	100	9.045 803
90.0	88	100	9.045 804
110.0	88	100	9.045 805
125.0	88	100	9.045 806
150.0	88	100	9.045 807
185.0	88	100	9.045 808
240.0	88	100	9.045 809



## 3 LLG-Qualitative filter paper, folded filters



Medium speed

Diam. mm	Filtration time secs.	PK	Cat. No.
70.0	50	100	7.659 027
125.0	50	100	9.045 825
150.0	50	100	9.045 826
185.0	50	100	9.045 827
240.0	50	100	6.242 632



## 4 LLG-Qualitative filter paper, circles



Slow

Diam. mm	Filtration time secs.	PK	Cat. No.
70.0	180	100	7.970 267
90.0	180	100	7.970 268
110.0	180	100	6.242 672
125.0	180	100	7.970 134
150.0	180	100	7.970 139
185.0	180	100	6.242 671



## 5 LLG-Qualitative filter paper, sheets

Medium speed

Dimensions mm	Filtration time secs.	PK	Cat. No.
460 x 570	88	100	9.045 810

## 6. Distillation, separation, filtration

### Filtration/Filter paper, qualitative

#### 1 Filter paper, Grade 4

Circles. Qualitative. Fast flowrate. Excellent retention of coarse and gelatinous precipitants. Smooth. Supplied in packs of circles as outlined below.

GE Healthcare

Flowrate:	Fast
Retention:	High
Wet strength:	Low
Thickness:	0.21mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
42.5	100	9.056 231
55	100	9.056 233
70	100	9.056 235
90	100	9.056 196
110	100	9.056 230
125	100	9.056 232
150	100	9.056 234
185	100	9.056 236
240	100	9.056 237
320	100	9.056 239
460 x 570	100	9.056 334



#### 2 Filter paper, Grade 113

Circles. Qualitative. Fast flow. Excellent retention of coarse and gelatinous precipitates, creped.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	High
Thickness:	0.42mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
90	100	9.049 015
125	100	9.049 016
150	100	9.049 017
185	100	9.049 018
240	100	9.049 019



#### 3 Filter paper, Grade 114

Circles. Qualitative. Thin and very strong. Smooth surface.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	High
Thickness:	0.19mm

Diam. mm	PK	Cat. No.
150	100	9.049 027



#### 4 Filter paper, Grade 542

Circles. Qualitative. Hardened. Ashless. Highly retentive for fine precipitates.

GE Healthcare

Flow rate:	Slow
Retention:	Medium
Wet strength:	High
Thickness:	0.15mm
Ash:	<0.006 %

Diam. mm	PK	Cat. No.
55	100	9.056 500
70	100	9.056 461
90	100	9.056 502
110	100	9.056 503
125	100	9.056 504
150	100	9.056 505
185	100	9.056 506
240	100	9.056 507





## Filtration/Filter paper, qualitative



### 1 Filter paper, Grade 1

Circles and sheets. Qualitative. The most widely used grade of filter paper.

GE Healthcare

Flowrate:	Medium
Retention:	Medium
Wet strength:	Low
Thickness:	0.18mm

Diam. mm	PK	Cat. No.
20	400	9.048 942
25	400	9.048 943
30	400	9.048 944
32	100	9.048 937
42.5	100	9.056 199
47	100	9.048 945
55	100	9.056 200
70	100	9.056 201
85	100	9.048 946
90	100	9.056 202
110	100	9.056 203
125	100	9.056 204
150	100	9.056 205
185	100	9.056 206
240	100	9.056 207
270	100	9.056 208
320	100	9.056 209
400	100	9.056 278
500	100	9.056 279
26 x 31	1000	9.056 337
460 x 570	100	9.056 331
460 x 570	500	9.056 340
580 x 680	100	9.056 341
75 x 100	500	9.056 338



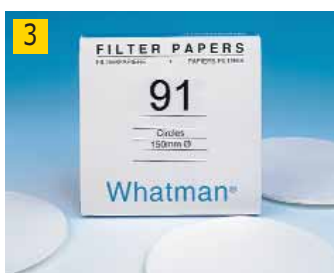
### 2 Filter paper, Grade 2

Circles and sheets. Qualitative. Slightly thicker and more retentive than number 1.

GE Healthcare

Flowrate:	Medium
Retention:	Medium
Wet strength:	Low
Thickness:	0.19mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
42.5	100	9.056 198
55	100	9.056 210
70	100	9.056 211
90	100	9.056 212
110	100	9.056 213
125	100	9.056 214
150	100	9.056 215
185	100	9.056 216
240	100	9.056 217
320	100	9.056 219
460 x 570	100	9.056 332



### 3 Filter paper, Grade 91

Circles and sheets. Qualitative. General purpose schools grade, creped.

GE Healthcare

Flowrate:	Medium
Retention:	Medium
Wet strength:	High
Thickness:	0.205mm

Diam. mm	PK	Cat. No.
110	100	9.048 938
125	100	9.048 933
150	100	9.048 939
185	100	9.048 934
240	100	9.048 940



## 6. Distillation, separation, filtration

### Filtration/Filter paper, qualitative

#### 1 Filter paper, Grade 3

Circles and sheets. Qualitative. Very thick. Double the thickness of number 1.

GE Healthcare

Flowrate:	Medium
Retention:	High
Wet strength:	High
Thickness:	0.39mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
55	100	9.056 220
70	100	9.056 221
90	100	9.056 222
110	100	9.056 223
125	100	9.056 224
150	100	9.056 225
185	100	9.056 226
240	100	9.056 227
460 x 570	100	9.056 333



#### 2 Qualitative filter paper, Grade 595, circles

**Medium fast 4 to 7µm**

GE Healthcare

- thin filter paper
- for medium to fine precipitates and general laboratory work
- Weight: 68g/m<sup>2</sup>
- Thickness: 0.150mm

Diam. mm	PK	Cat. No.
110	100	9.062 303
125	100	9.062 304
150	100	9.062 305



#### 3 Qualitative filter paper, Grade 597, circles and sheets

**Medium fast, 4 to 7µm**

GE Healthcare

- thicker and faster than 595
- for medium to fine precipitates
- Weight 81g/m<sup>2</sup>
- Thickness 0.180mm

Diam. mm	PK	Cat. No.
55	100	9.062 400
90	100	9.062 402
110	100	9.062 403
150	100	9.062 405
185	100	9.062 406
240	100	9.062 407
580 x 580	100	9.066 597



#### 4 Filter paper, Grade number 5

Circles. Qualitative. Slow flowrate. Retains fine precipitates, grained surface.

GE Healthcare

Supplied in packs of circles as outlined below.

Flowrate:	Slow
Retention:	High
Wet strength:	High
Thickness:	0.20mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
55	100	9.056 240
70	100	9.056 241
90	100	9.056 242
110	100	9.056 243
125	100	9.056 244
150	100	9.056 245
185	100	9.056 246
240	100	9.056 247





### 1 Filter paper, Grade number 6

Circles. Qualitative. Slow, faster as Grade 5. Supplied in packs of circles as outlined below.

GE Healthcare

Flowrate:	Slow
Retention:	High
Wet strength:	Low
Thickness:	0.18mm
Ash:	0.20%

Diam. mm	PK	Cat. No.
70	100	9.056 251
90	100	9.056 252
110	100	9.056 253
125	100	9.056 254
150	100	9.056 255
185	100	9.056 256
240	100	9.056 257

### Qualitative filter paper, Grade 602 h, circles

**Slow < 2µm**

GE Healthcare

- thick filter paper
- for fine precipitates
- Weight: 84g/m<sup>2</sup>
- Thickness: 0.16mm

Diam. mm	PK	Cat. No.
125	100	9.062 704
185	100	9.062 706

### Qualitative filter paper, Grade 604½, folded filters

**Fast, 12 to 25µm**

GE Healthcare

- time saving, because folded filters have a larger surface area
- filter faster than comparable circular filters
- for coarse precipitates (e.g. hydroxide and sulphide)
- Weight: 80g/m<sup>2</sup>
- Thickness: 0.19mm

Diam. mm	PK	Cat. No.
150	100	9.063 905
185	100	9.063 906
240	100	9.063 907
320	100	9.063 909

### 2 Qualitative filter paper, Grade 1573½, folded filters

**Fast, 12 to 25µm**

GE Healthcare

- wet-strength
- time saving, because folded filters have a larger surface area than circular filters of the same diameter
- Weight: 88g/m<sup>2</sup>
- Thickness: 0.17mm

Diam. mm	PK	Cat. No.
125	100	9.065 104
150	100	9.065 105
185	100	9.065 106
240	100	9.065 107
270	100	9.065 108
320	100	9.065 109

### 3 Qualitative filter paper, Grade 598½, folded filters

**Medium to fast, 8 to 10µm**

GE Healthcare

- thick filter paper
- for fast filtration of coarse precipitates
- Weight: 140g/m<sup>2</sup>
- Thickness: 0.32mm

Diam. mm	PK	Cat. No.
125	50	9.063 604
185	50	9.063 606
240	50	9.063 607
500	50	9.063 611
580 x 580	250	9.066 598

2



3



## 6. Distillation, separation, filtration

### Filtration/Filter paper, qualitative

#### 1 Qualitative filter paper, Grade 595½, folded filters

##### Medium fast, 4 to 7µm

GE Healthcare

- time saving, because folded filters have a larger surface area
- filter faster than comparable circular filters
- for medium to fine precipitates and general laboratory work
- Weight: 68g/m<sup>2</sup>
- Thickness: 0.15mm

Diam. mm	PK	Cat. No.
70	100	9.063 301
110	100	9.063 303
125	100	9.063 304
150	100	9.063 305
185	100	9.063 306
240	100	9.063 307
270	100	9.063 308
320	100	9.063 309
385	100	9.063 310



#### 2 Qualitative filter paper, Grade 597½, folded filters

##### Medium fast, 4 to 7µm

GE Healthcare

- time saving, because folded filters have a larger surface area
- for medium to fine precipitates
- Weight: 81g/m<sup>2</sup>
- Thickness: 0.18mm

Diam. mm	PK	Cat. No.
90	100	9.063 402
110	100	9.063 403
125	100	9.063 404
150	100	9.063 405
185	100	9.063 406
240	100	9.063 407
270	100	9.063 408
320	100	9.063 409
385	100	9.063 410
500	100	9.063 411



#### 3 Filter paper, Grade number 2 V

Qualitative. Folded (pre-pleated) version of Number 2.

GE Healthcare

Flowrate:	Medium
Retention:	Medium
Wet strength:	Low
Thickness:	0.19mm
Ash:	0.06%

Diam. mm	PK	Cat. No.
125	100	9.056 304
150	100	9.056 305
185	100	9.056 306
240	100	9.056 307
270	100	9.056 308
320	100	9.056 309



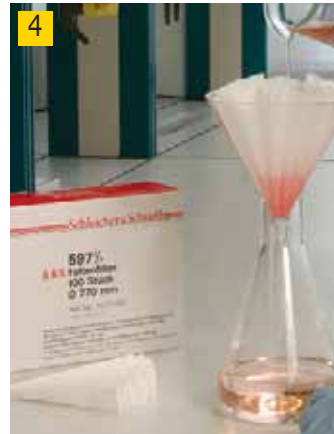
#### 4 Qualitative filter paper, Grade 593 ½, folded filters

##### Medium to slow 2 to 5µm

GE Healthcare

- time saving, because folded filters have a larger surface area than comparable circular filters
- for medium to fine precipitates and general laboratory work
- Weight: 85g/m<sup>2</sup>
- Thickness: 0.17mm

Diam. mm	PK	Cat. No.
185	100	9.063 106
240	100	9.063 107



## Filtration/Filter paper, qualitative

## Qualitative filter paper, Grade 594½, folded filters

**Slow 2 to 4µm**

GE Healthcare

- for fine precipitates
- Weight: 75g/m<sup>2</sup>
- Thickness: 0.15mm

Diam. mm	PK	Cat. No.
185	100	<b>9.063 206</b>

## Qualitative filter paper, thick, Grade 602eh½, folded filters

**Very slow, <2 µm**

GE Healthcare

- thick filter paper
- for fine precipitates
- Weight: 85g/m<sup>2</sup>
- Thickness: 0.15mm

Diam. mm	PK	Cat. No.
125	100	<b>9.063 804</b>
150	100	<b>9.063 805</b>

**1 Filter paper, grade 113 V**

Circles. Prepleated. Qualitative. Excellent retention of coarse and gelatinous precipitates, creped.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	High
Thickness:	0.42mm

Diam. mm	PK	Cat. No.
125	100	<b>9.056 294</b>
150	100	<b>9.056 295</b>
185	100	<b>9.056 296</b>
240	100	<b>9.056 297</b>
270	100	<b>9.056 298</b>
320	100	<b>9.056 299</b>
500	100	<b>9.056 301</b>

**2 Filter paper, grade 114 V**

Circles. Prepleated. Qualitative. Thin and very strong. Smooth surface.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	High
Thickness:	0.19mm

Diam. mm	PK	Cat. No.
125	100	<b>9.056 324</b>
150	100	<b>9.056 325</b>
185	100	<b>9.056 326</b>
240	100	<b>9.056 327</b>



### LLG-Filter papers for quantitative analysis

Made from 100% cellulose.

Ash content 0.007%.

Filtration speed according to DIN 53137.

Capacity of separation according to DIN 53135.

#### 1 LLG-Quantitative filter paper, circles

##### Fast 12 to 25µm

- for coarse, high volume precipitates
- for determinations according to the German Standard Methods for the examination of water, waste water and sludge.
- most frequently used quantitative filter
- ashless, equivalent black tape

Diam. mm	Filtration time secs.	PK	Cat. No.
70	10	100	9.045 840
90	10	100	9.045 841
110	10	100	9.045 842
125	10	100	9.045 843
150	10	100	9.045 844
185	10	100	9.045 845



#### 2 LLG-Quantitative filter paper, circles

##### Slow < 2µm.

- for very fine precipitates and small particles
- for soil analysis
- for BaSO<sub>4</sub> (hot precipitate), PbSO<sub>4</sub>, Cu<sub>2</sub>O, ZnS, NiS
- ashless, equivalent blue tape

Diam. mm	Filtration time secs.	PK	Cat. No.
70	180	100	7.970 271
90	180	100	9.045 850
110	180	100	6.242 670
125	180	100	9.045 851
150	180	100	9.045 852
185	180	100	6.242 669
320	180	100	7.970 611



#### 3 LLG-Quantitative filter paper, circles

medium fast/fast



Diam. mm	Filtration time secs.	PK	Cat. No.
90	20	100	7.970 057
110	20	100	7.970 000
125	20	100	7.970 058
150	20	100	7.970 001
185	20	100	7.970 002
200	20	100	6.242 179



#### 4 LLG-Quantitative filter paper, circles

medium fast



Diam. mm	Filtration time secs.	PK	Cat. No.
55	50	100	6.256 437
70	50	100	7.970 571
90	50	100	7.970 032
110	50	100	6.242 748
125	50	100	7.970 045
150	50	100	6.252 765
185	50	100	6.242 747
240	50	100	7.970 591



## Filtration/Filter paper, quantitative

1



1

## Quantitative filter paper, Grade 589/1, circles

**Fast 12 to 25µm****Black ribbon**

- for coarse, high volume precipitates
- for determinations according to the German Standard Methods for the examination of water, waste water and sludge.
- most frequently used quantitative filter
- Weight: 80g/m<sup>2</sup>
- Thickness: 0.19mm

GE Healthcare

Diam. mm	PK	Cat. No.
90	100	9.060 102
110	100	9.060 103
125	100	9.060 104
150	100	9.060 105
185	100	9.060 106

2



2

## Quantitative filter paper, grade 41

Circles. Quantitative. Ashless. For filtration of coarse and gelatinous precipitates.  
Supplied in box of 100.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	Low
Thickness:	0.22mm
Ash:	0.007%

Diam. mm	PK	Cat. No.
55	100	9.056 410
60	100	9.049 045
70	100	9.056 411
90	100	9.056 412
110	100	9.056 413
125	100	9.056 414
150	100	9.056 415
185	100	9.056 416
240	100	9.056 417

3



3

## Quantitative filter paper, Grade 589/2

**Medium fast, 4 to 12µm. White ribbon.**

GE Healthcare

- for the analysis of foodstuffs
- for carbonates of alkaline earth metals,  $(\text{NH}_4)_3[\text{P}(\text{Mo}_3\text{O}_{10})_4] \times \text{aq.}$ ,  $\text{Mg}(\text{NH}_4)\text{PO}_4$ ,  $\text{CaC}_2\text{O}_4$  (hot precipitates)
- Weight: 85g/m<sup>2</sup>
- Thickness: 0.18mm

Diam. mm	PK	Cat. No.
55	100	9.060 200
70	100	9.060 201
90	100	9.060 202
110	100	9.060 203
125	100	9.060 204
150	100	9.060 205
185	100	9.060 206
240	100	9.060 207

## Quantitative filter paper, grade 40

Circles. Quantitative. Ashless.

GE Healthcare

Flow rate:	Medium
Retention:	Medium
Wet strength:	Low
Thickness:	0.21mm
Ash:	0.007%

Diam. mm	PK	Cat. No.
32	100	9.049 035
42.5	100	9.056 399
55	100	9.056 400
70	100	9.056 401
90	100	9.056 402
110	100	9.056 403
125	100	9.056 404
150	100	9.056 405
185	100	9.056 406
240	100	9.056 407



## 6. Distillation, separation, filtration

### Filtration/Filter paper, quantitative

#### 1 Quantitative filter paper, Grade 589/3, circles

**Slow < 2µm. Blue ribbon.**

GE Healthcare

- for very fine precipitates and small particles
- for soil analysis
- for BaSO<sub>4</sub> (hot precipitate), PbSO<sub>4</sub>, Cu<sub>2</sub>O, ZnS, NiS
- Weight: 84g/m<sup>2</sup>
- Thickness: 0.16mm

Diam. mm	PK	Cat. No.
110	100	9.060 303
125	100	9.060 304
150	100	9.060 305
185	100	9.060 306

1



#### Filter paper, grade 42

Circles. Quantitative. Ashless. For filtration of fine precipitates.

GE Healthcare

Flow rate: Slow  
Retention: High  
Wet strength: Low  
Thickness: 0.20mm  
Ash: 0.007%

Diam. mm	PK	Cat. No.
42.5	100	9.056 419
55	100	9.056 420
70	100	9.056 421
90	100	9.056 422
110	100	9.056 423
125	100	9.056 424
150	100	9.056 425
185	100	9.056 426
240	100	9.056 427

#### Phase separators, 1PS

**NEW!**

A silicone impregnated, water repellent paper which can be used to separate aqueous solutions from immiscible solvents. The aqueous phase is retained and the organic phase passes through. Will retain solid particles. Can be used either flat under suction not exceeding 70mm Hg or quadrant folded in a conical glass funnel. Supplied in box of 100 circles.

GE Healthcare

Note: This paper contains a small quantity of tin complex catalyst. It is therefore not recommended for use when this complex may cause interference, e.g. with the use of dithizone (diphenylthiocarbazone) reagent.

Flow rate: Fast  
Retention: Medium  
Wet strength: High  
Thickness: 0.16mm  
Ash: 0.008%

Diam. mm	PK	Cat. No.
70	100	9.056 891
90	100	9.056 892
110	100	9.056 893
125	100	9.056 894
150	100	9.056 895
185	100	9.056 896
240	100	9.056 897
270	100	9.056 898



## Filtration/Glass-fibre filters

### Glass microfibre filters

Glass microfibre filters have a fast filtration and a high loading capacity and particle retention rate. Manufactured without chemical binder from high grade borosilicate glass. (Exception: GF6, GF9). They are suitable for gravity or low suction filtration. Filtration speeds generally very much higher than conventional cellulose papers. Efficient retention of micron size particles. Must be used flat. Ideal for use in flat perforated plate Buchner type funnels (not sintered glass models). Can be used up to 500°C.

Wide range of applications including:

- retention of fine analytical precipitates
- retention of biochemical gelatinous precipitates
- water/air pollution analyses
- as prefilters for membranes
- scintillation counting
- radioimmunoassay.



### 1 LLG-Glass microfibre filters, filter circles



Diam. mm	Filtration time secs.	Weight g / m <sup>2</sup>	Thickness mm	PK	Cat. No.
25	60*	52	0.26	100	9.045 860
37	60*	52	0.26	100	7.970 790
47	60*	52	0.26	100	9.045 861
55	60*	52	0.26	100	6.242 633
90	60*	52	0.26	100	6.252 072
110	60*	52	0.26	100	7.970 339
125	60*	52	0.26	100	7.970 033
150	60*	52	0.26	100	9.045 862
25	100*	52	0.26	100	9.045 865
47	100*	52	0.26	100	6.243 711
55	100*	52	0.26	100	6.251 383
70	100*	52	0.26	100	9.045 866
90	100*	52	0.26	100	9.045 867
110	100*	52	0.26	100	9.045 868
47	310*	75	0.45	100	7.970 106
55	310*	75	0.45	100	7.970 742
70	310*	75	0.45	100	6.253 553

\*filtration velocity according to Herzberg



### 2 Glass microfibre filters, grade GF 9, circles

Glass fibre filters are made of 100% borosilicate glass fibres with an inorganic binder. Temperature resistant up to 500°C.

GE Healthcare

Glass fibre filters are chemically resistant except against hydrofluoric acids and highly concentrated alkalis.

#### Application:

- Gas-/air-monitoring
- Water and waste water determination

Retention rate:	99.97%
Filtration time according to Herzberg:	120s
Filtration time according to Gurley:	20s
Weight:	70g/m <sup>2</sup>
Thickness:	350µm

Diam. mm	PK	Cat. No.
50	200	9.068 699
90	100	9.068 702
110	100	9.068 703



### 3 Glass microfibre filters, grade GF 6, circles

GE Healthcare

Retention rate:	99.97%
Filtration time according to Herzberg:	200s
Filtration time according to Gurley:	40s
Weight:	80g/m <sup>2</sup>
Thickness:	350µm

Diam. mm	PK	Cat. No.
55	100	9.068 500
70	100	9.068 501
90	100	9.068 502
110	100	9.068 503
125	100	9.068 504
150	100	9.068 505
185	100	9.068 506
240	100	9.068 507

## 6. Distillation, separation, filtration

### Filtration/Glass-fibre filters

#### 1 Glass microfibre filters, grade GF/F

This ultra-fine filter has a 98% retention efficiency for particles as small as 0.7µm in liquids. Particle retention to 0.7µm.

GE Healthcare

Diam. mm	PK	Cat. No.
24	100	9.056 666
25	100	9.056 676
42.5	100	9.056 716
47	100	9.056 726
55	100	9.056 780
70	100	9.056 781
90	25	9.056 782
110	25	9.056 783
125	25	9.056 784
150	25	9.056 785
257	25	9.056 787
570 x 460	25	9.056 805

1



#### 2 Glass microfibre filters, grade GF/B

Three times thicker and with greater wet strength than GF/A. Particle retention to 1µm. Supplied in pack quantities as outlined below.

GE Healthcare

Diam. mm	PK	Cat. No.
24	100	9.056 662
25	100	9.056 672
37	100	9.056 692
42.5	100	9.056 712
47	100	9.056 722
55	100	9.056 750
70	100	9.056 751
90	25	9.056 752
110	25	9.056 753
125	25	9.056 754
150	25	9.056 755
185	25	9.056 756
570 x 460	25	9.056 802

2



#### 3 Glass microfibre filters, grade GF/C

Extremely efficient filter made to retain fine particles and micro organisms. Particle retention to 1.2µm.

GE Healthcare

Diam. mm	PK	Cat. No.
21	100	9.056 643
24	100	9.056 663
25	100	9.056 673
42.5	100	9.056 713
47	100	9.056 723
50	100	9.056 759
55	100	9.056 760
70	100	9.056 761
90	100	9.056 762
110	100	9.056 763
125	100	9.056 764
150	100	9.056 765
254 x 102	50	9.056 816
570 x 460	25	9.056 803

3



#### 4 Glass microfibre filters, grade 934-AH

Circles. High retention at high flow rates. Widely used in water pollution monitoring techniques for suspended solids, and is specified in US Method 934-AH. Particle retention to 1.5µm.

GE Healthcare

Diam. mm	PK	Cat. No.
24	100	9.056 667
47	100	9.056 727
55	100	9.056 730
70	100	9.056 731
90	100	9.056 732
110	100	9.056 733
125	100	9.056 734

4



## Filtration/Glass-fibre filters



### 1 Glass microfibre filters, grade GF/A

The general purpose high efficiency glass microfibre filter. Particle retention to 1.6µm. Supplied in pack quantities as indicated.

GE Healthcare

Diam. mm	PK	Cat. No.
21	100	9.056 641
24	100	9.056 661
25	100	9.056 671
37	100	9.056 691
42.5	100	9.056 711
47	100	9.056 721
50	100	9.056 725
55	100	9.056 740
60	100	9.056 739
70	100	9.056 741
90	100	9.056 742
110	100	9.056 743
125	100	9.056 744
150	100	9.056 745
254 x 203	100	9.056 811
570 x 460	25	9.056 801

### Glass microfibre filters, grade EPM 2000

For use in high volume air sampling apparatus. Particle retention to 2µm.

GE Healthcare

Diam. mm	PK	Cat. No.
203 x 254	100	9.049 672



### 2 Glass microfibre filters, grade GF/D

Thick filter made from less fibres and retaining around 3µm particles with a very high loading capacity. Extremely high speed. Particle retention to 2.7µm.

GE Healthcare

Diam. mm	PK	Cat. No.
25	100	9.056 674
47	100	9.056 724
70	100	9.056 771
90	25	9.056 772
110	25	9.056 773
125	25	9.056 774
150	25	9.056 775
257	25	9.056 777



### 3 Quartz microfibre filters, grade QM-A

Manufactured from quartz microfibre to withstand high temperatures. Can be used up to 500°C.

GE Healthcare

Flow rate:	Fast
Retention:	Medium
Wet strength:	High
Thickness:	0.475mm

Diam. mm	PK	Cat. No.
25	100	9.056 679
37	100	9.056 699
47	100	9.056 729
203 x 254	25	9.056 814

### 1 Membrane filters, Grade NC, made from cellulose nitrate

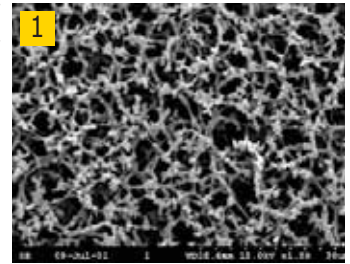
**Applications:**

- For prefiltration and dust measurement, clarification and sterile filtration
- For aqueous solutions

**Properties:**

- Very easily wetted
- Hydrophilic
- Can be used up to 125°C
- Autoclavable up to 121°C

GE Healthcare



Type	Pore size µm	Diam. mm	PK	Cat. No.
NC 10	0.10	47	100	9.057 341
NC 10	0.10	50	100	9.057 342
NC 20	0.20	25	100	9.058 326
NC 20	0.20	47	100	9.058 327
NC 20	0.20	50	100	9.058 328
NC 45	0.45	25	100	9.057 219
NC 45	0.45	47	100	9.057 220
NC 45	0.45	50	100	9.057 222
NC 45	0.45	100	50	9.057 225
NC 45	0.45	110	50	9.057 226
NC 45	0.45	142	25	9.057 228

### 2 Membrane filters, Cellulose nitrate, WCN

Plain white. Circles.

GE Healthcare

Pore size µm	Diam. mm	PK	Cat. No.
0.10	25	100	9.950 979
0.10	47	100	9.950 980
0.20	13	100	9.950 981
0.20	25	100	9.950 982
0.20	47	100	9.950 983
0.20	90	25	9.950 984
0.20	142	25	9.950 985
0.45	13	100	9.950 988
0.45	25	100	9.950 989
0.45	47	100	9.950 991
0.45	50	100	9.950 992
0.45	90	25	9.950 994
0.45	142	25	9.950 995
0.65	47	100	9.950 998
0.80	25	100	9.951 001
0.80	37	100	9.951 002
0.80	47	100	9.951 003
0.80	90	25	9.951 004
1.00	25	100	9.951 005
1.00	47	100	9.951 006
1.20	50	100	9.951 008
1.20	142	25	9.951 009
3.00	25	100	9.951 010
3.00	47	100	9.951 011
5.00	25	100	9.951 012
5.00	47	100	9.951 013
5.00	90	25	9.951 014



### 3 Membrane filters, Grade AE, made from pure cellulose nitrate

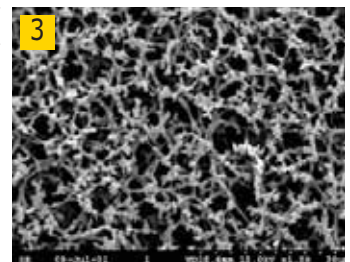
**Applications:**

For prefiltration and dust measurement, clarification and sterile filtration.

GE Healthcare

**Properties:**

- Very easily wetted
- For aqueous solutions
- Hydrophilic
- Can be used up to 125°C
- Autoclavable up to 121°C



Type	Pore size µm	Diam. mm	PK	Cat. No.
AE 98	5.00	47	100	9.057 041
AE 98	5.00	50	100	9.057 042
AE 99	8.00	25	100	9.057 005
AE 99	8.00	47	100	9.057 011
AE 99	8.00	50	100	9.057 012
AE 100	12.00	47	100	9.057 191
AE 100	12.00	50	100	9.057 193

## Filtration/Membrane filters



## 1 Membrane Filters, Grade RC, Regenerated cellulose

**(NEW)**

GE Healthcare

**Application:**

For the sterilisation and particle filtration of aqueous and organic solutions

**Properties**

- spontaneously wetted, very good wet-strength
- high chemical resistance, useful for aqueous and organic media
- hydrophilic
- can be used up to 180°C
- sterilisable by all methods
- suitable for use as sterile filter to ASTM-D 3862-80

Type	Pore size µm	Diam. mm	PK	Cat. No.
RC 58	0.20	47	100	9.057 771
RC 55	0.45	47	100	9.057 791
RC 58	0.20	50	100	9.057 772
RC 55	0.45	50	100	9.057 792
RC 60	1.00	50	100	9.057 712
RC 55	0.45	100	25	9.057 795
RC 55	0.45	142	25	9.057 798



## 2 Membrane filters, Grade ME, made from mixed cellulose esters

GE Healthcare

**Applications:**

- Excellent for gravimetric analysis
- Especially for aqueous solutions
- Ideally suitable for contamination test

**Properties:**

- Economical
- Constant weight
- Hydrophilic
- Not sterile
- Can be used up to 125°C
- Autoclavable up to 121°C

Type	Pore size µm	Diam. mm	PK	Cat. No.
ME24	0.20	25	100	9.058 965
ME24	0.20	47	100	9.058 969
ME24	0.20	50	100	9.058 987
ME24	0.20	142	25	9.058 981
ME25	0.45	25	100	9.058 935
ME25	0.45	47	100	9.058 939
ME25	0.45	50	100	9.058 942
ME25	0.45	100	50	9.058 946
ME25	0.45	110	50	9.057 812
ME25	0.45	142	25	9.058 951
ME27	0.80	25	100	9.058 865
ME27	0.80	47	100	9.058 869
ME27	0.80	50	100	9.058 872
ME28	1.20	47	100	9.058 839
ME28	1.20	50	100	9.058 842
ME29	3.00	25	100	9.057 800
ME29	3.00	47	100	9.058 809
ME29	3.00	50	100	9.058 812



## 3 Membrane filters, Grade OE, made from cellulose acetate

GE Healthcare

Very high wet strength and very low ability for protein binding.

For filtration of aqueous, alcohol and oil-based solutions at temperatures up to 180°C.

Description	Pore size µm	Diam. mm	PK	Cat. No.
OE 67	0.45	25	100	9.057 565
OE 67	0.45	47	100	9.057 571
OE 67	0.45	50	100	9.057 572
OE 67	0.45	142	25	9.057 578
OE 66	0.20	25	100	9.057 605
OE 66	0.20	47	100	9.057 611
OE 66	0.20	50	100	9.057 612
OE 66	0.20	142	25	9.057 618



### 1 Membrane filters, Cellulose mixed ester

Composed of cellulose acetate (~20%) and cellulose nitrate (~80%).

GE Healthcare

Type	Pore size µm	Diam. mm	PK	Cat. No.
Gridded white	0.45	47	100	9.951 016
Gridded white	0.80	25	100	9.951 018



### 2 Membrane filters, Grade NL, made from pure polyamide

#### Application:

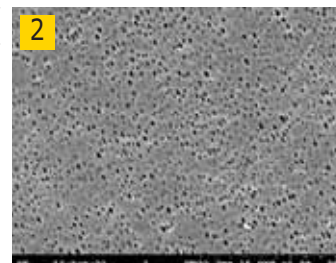
- Universal filter, especially in the pharmaceutical section

#### Properties:

- Mechanically very strong
- For aqueous and organic solutions
- Hydrophilic
- Can be used up to 135°C
- Autoclavable up to 134°C

GE Healthcare

Type	Pore size µm	Diam. mm	PK	Cat. No.
NL 16	0.20	47	100	9.057 433
NL 17	0.45	25	100	9.057 452
NL 17	0.45	47	100	9.057 453
NL 17	0.45	50	100	9.057 454



### 3 Membrane filters, Nylon

Hydrophilic, durable and compatible with a wide range of aqueous solutions, organic solvents and for the filtration of biological preparations and media. Autoclavable at 121°C.

GE Healthcare

Pore size µm	Diam. mm	PK	Cat. No.
0.20	13	100	9.951 042
0.20	47	100	9.951 043
0.20	90	50	9.951 044
0.45	13	100	9.951 045
0.45	25	100	9.951 046
0.45	47	100	9.951 047
0.45	90	50	9.951 048
0.80	47	100	9.951 049



### 4 Membrane filters, Grade TE, PTFE with support

#### Applications:

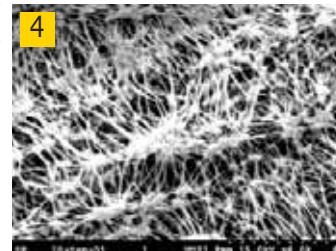
- Ideal venting filter for all applications
- For aggressive media and cryogenic liquids
- Separation of free water from organic solutions
- Outstanding as gas/liquid barrier
- Filtration of air and (hot) gases

#### Properties:

- Chemically inert to aqueous and organic solutions as well as concentrated acids and bases
- Hydrophobic - for aqueous filtration the pressure must be higher than the water breakthrough pressure
- Can be used up to 145°C
- Can be sterilised by all methods except gamma radiation

GE Healthcare

Type	Pore size µm	Diam. mm	PK	Cat. No.
TE 35	0.20	25	50	9.058 682
TE 35	0.20	47	50	9.058 683
TE 35	0.20	50	50	9.058 684
TE 36	0.45	47	50	9.058 663
TE 36	0.45	50	50	9.058 664
TE 37	1.00	25	50	9.058 642
TE 37	1.00	47	50	9.058 643
TE 37	1.00	50	50	9.058 644
TE 38	5.00	47	50	9.058 623
TE 38	5.00	50	50	9.058 624



## Filtration/Membrane filters



## 1 Membrane filters, PTFE, WTP

With PP backing.

GE Healthcare

Pore size µm	Diam. mm	PK	Cat. No.
0.20	25	100	9.951 029
0.20	47	100	9.951 030
0.50	47	100	9.951 031
1.00	47	100	9.951 033



## 2 Membrane filters, inorganic, Anodisc®

Material: Anopore®. White.

GE Healthcare

The inorganic membrane Anopore® consists of high-purity aluminium oxide and can be used for a wide range of applications. The unique material has a precise, non-deformable honeycomb structure with a narrow pore size distribution range that guarantees very efficient particle retention.

In addition, the membrane has a low protein binding capacity, minimal autofluorescence, is non-toxic and supports cellular growth.

Pore size µm	Diam. mm	PK	Cat. No.
0.02	13	100	9.951 034
0.02	25	50	9.951 035
0.02	47	50	7.604 787
0.10	13	100	9.951 036
0.10	25	50	6.235 017
0.10	47	50	9.951 038
0.20	13	100	9.951 039
0.20	25	50	9.951 040
0.20	47	50	9.951 041



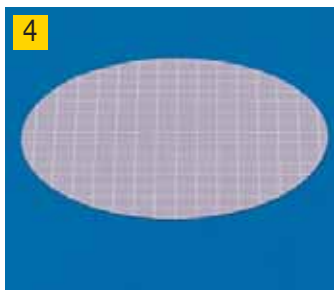
## 3 Membrane filters, cellulose nitrate

Type 113. White. Very low content of extractable materials. Weight constant after 60 minutes of drying at 105°C. Suitable for residue analysis, microscopic viewing in incident or transmitted light, chemotaxis, x-ray fluorescence, spectrometry and gravimetric analysis. Autoclavable at 121°C. Other pore sizes and formats are available on request.

Sartorius

Type	Pore size µm	Diam. mm	PK	Cat. No.
11301	8.00	25	100	9.053 304
11301	8.00	47	100	9.053 308
11301	8.00	50	100	9.053 309
11302	3.00	50	100	9.053 349
11303	1.20	25	100	9.053 364
11303	1.20	47	100	9.053 368
11303	1.20	50	100	9.053 369
11304	0.80	25	100	9.053 384
11304	0.80	47	100	9.053 388
11304	0.80	50	100	9.053 389
11306	0.45	25	100	9.053 424
11306	0.45	47	100	9.053 428
11306	0.45	50	100	9.053 429
11306	0.45	142	25	9.053 432

Other patterns are available on request.



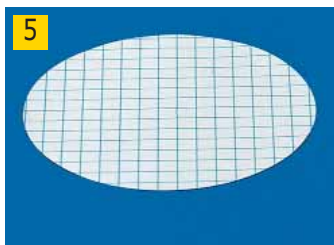
## 4 Membrane filters Type 13005/13006, series

Cellulose nitrate. Grey membranes (black after wetting) with white grid. For detection of yeasts and moulds, particle analysis and microscopy.

Sartorius

Type	Pore size µm	Diam. mm	Description	PK	Cat. No.
13005	0.65	47	sterile	100	9.054 122
13006	0.45	47	sterile	100	9.054 132
13006	0.45	50	sterile	100	9.054 133
13006	0.45	50	non-sterile	100	9.054 139

Other types available on request.



## 5 Membrane filters, gridded Type 13806

Cellulose nitrate. Sterile, individually packed. Green with dark green grid. Optimal contrast to light or white bacteria colonies when colony counting.

Sartorius

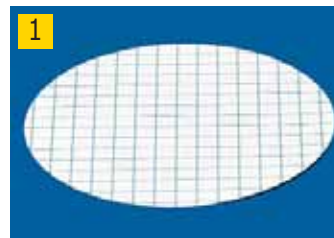
Type	Pore size µm	Diam. mm	PK	Cat. No.
13806	0.45	47	100	9.054 202
13806	0.45	50	100	9.054 203

### 1 Membrane filters, gridded Type 13906 and 139H6

Cellulose nitrate. Sterile and individually packed. White with green grid.  
For the evaluation of microbiological and particle samples.

Sartorius

Type	Pore size $\mu\text{m}$	Diam. mm	Description	PK	Cat. No.
13906	0.45	47	Standard	100	9.054 460
13906	0.45	50	Standard	100	9.054 462
139H6	0.45	47	High flow	100	9.054 464
139H6	0.45	50	High flow	100	9.054 465



### 2 Membrane filters, cellulose acetate

Type 111. Resistant to steam sterilisation up to 134°C, or in dry heat up to 180°C.

Sartorius

Very low adsorption (important when filtering proteinaceous solutions). Suitable for particle removal and ultracleaning of aqueous solutions, methanol, ethanol, high-grade alcohols and residue analysis of fuels and oils. The extractable content of these filters make up <1% of their weight.

Other pore sizes and formats available on request.

Type	Pore size $\mu\text{m}$	Diam. mm	PK	Cat. No.
11106	0.45	25	100	9.053 044
11106	0.45	47	100	9.053 048
11106	0.45	50	100	9.053 049
11106	0.45	142	25	9.053 055
11107	0.20	25	100	9.053 064
11107	0.20	47	100	9.053 068
11107	0.20	50	100	9.053 069
11107	0.20	142	25	9.053 075

Other patterns are available on request.



### 3 Membrane filters, Polyamide

Type 250. Polyamide, white. For filtration of alkaline solutions and organic solvents.

Sartorius

Type	Pore size $\mu\text{m}$	Diam. mm	PK	Cat. No.
2506	0.45	25	100	9.053 227
2506	0.45	47	100	9.053 242
2506	0.45	50	100	9.053 243
2507	0.20	25	100	9.053 222
2507	0.20	47	100	9.053 223
2507	0.20	50	100	9.053 224

Other patterns are available on request.



### 4 Membrane filters, blotting, Polycarbonate

Type 230. Polycarbonate (PC), white, non-sterile. Ultrapure, polycarbonate membrane with especially smooth surface and fine pore distribution. Applications include COD/TOC testing, particle analysis or epifluorescence microscopy.

Sartorius

Type	Pore size $\mu\text{m}$	Diam. mm	PK	Cat. No.
23006	0.40	25	100	9.049 182
23006	0.40	47	100	9.049 183
23007	0.20	25	100	9.049 180
23007	0.20	47	100	9.049 181

Other patterns are available on request.



## Filtration/Syringe filters

## LLG-Syringe Filters

We offer a line of syringe filters especially designed to provide efficient filtration of a broad variety of fluids, solvents, aqueous or inorganic solutions. Our syringe filters cover most applications in HPLC, pharmaceutical, environmental, biotechnology and food and beverage testing laboratories.

- Housing injected in Polypropylene or MABS
- Multifunctional Syringe filters equipped with Female Luer-Lock/Male Luer Lock or Male Luer Slip connections for different applications
- Pre-sterilised or non-sterile
- Sterile products in individual hard blister
- Superior pressure stability
- Easy to identify because of colour code and printed description

1



9.055 500

## LLG Syringe Filter CA, Cellulose acetate

NEW!

Hydrophilic membrane for filtration of aqueous solutions

This membrane features excellent shape stability in aqueous solutions and a very low binding capacity for proteins (21µg per 25 mm Filter).

Ideal for use with biological macromolecules, water soluble oligomers and polymers. With Luer-Lock-outlet.

2



9.055 503

Filter diam. mm	Pore size µm	Housing	Type	PK	Cat. No.
13	0.20	Acrylic, blue	non sterile	500	<b>9.055 500</b> 1
13	0.45	Acrylic, yellow	non sterile	500	<b>9.055 502</b>
13	0.80	Acrylic, green	non sterile	500	<b>9.055 504</b>
25	0.20	Acrylic, blue	non sterile	500	<b>9.055 501</b>
25	0.45	Acrylic, yellow	non sterile	500	<b>9.055 503</b> 2
25	0.80	Acrylic, green	non sterile	500	<b>7.970 389</b>
13	0.20	Acrylic, blue	sterile	50	<b>9.055 510</b>
13	0.45	Acrylic, yellow	sterile	50	<b>9.055 512</b>
25	0.20	Acrylic, blue	sterile	50	<b>9.055 511</b>
25	0.45	Acrylic, yellow	sterile	50	<b>9.055 513</b>

3



9.055 520

## LLG Syringe Filter NY, Nylon/Polyamide

NEW!

This is a rather hydrophilic membrane. Recommended for filtration of aqueous and organic/aqueous medium polar liquids.

Excellent chemical compatibility with esters, bases and alcohols.

Filter diam. mm	Pore size µm	Housing	Type	PK	Cat. No.
13	0.20	PP	non sterile	500	<b>9.055 520</b> 3
13	0.45	PP	non sterile	500	<b>9.055 522</b>
25	0.20	PP	non sterile	500	<b>9.055 521</b>
25	0.45	PP	non sterile	500	<b>9.055 523</b>

4



9.055 541

## LLG Syringe Filter PE, Polyethylene

NEW!

Universal Filter membrane for all analytical requirements. For aqueous and aggressive organic solvent filtration.

Wide application in sample preparation, Ion chromatography.

Filter diam. mm	Pore size µm	Housing	Type	PK	Cat. No.
13	0.20	PP	non sterile	500	<b>9.055 540</b>
13	0.50	PP	non sterile	500	<b>9.055 542</b>
25	0.20	PP	non sterile	500	<b>9.055 541</b> 4
25	0.50	PP	non sterile	500	<b>9.055 543</b>

5



9.055 530

## LLG Syringe Filter RC, Regenerated cellulose

NEW!

Hydrophilic membrane features very low adsorption. Recommended for filtration of aqueous and organic/aqueous liquids.

For filtration of polar and medium polar liquids.

Filter diam. mm	Pore size µm	Housing	Type	PK	Cat. No.
13	0.20	PP	non sterile	500	<b>9.055 530</b> 5
13	0.45	PP	non sterile	500	<b>9.055 532</b>
25	0.20	PP	non sterile	500	<b>9.055 531</b>
25	0.45	PP	non sterile	500	<b>9.055 533</b>



### LLG Syringe Filter PTFE, Polytetrafluorethylene

**NEW!**

Hydrophobic membrane. Ideal for filtration of non-polar liquids and gases. It is very resistant to various solvents as well as acids and bases.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	PP	non sterile	500	<b>7.970 402</b>
13	0.45	PP	non sterile	500	<b>7.970 385</b>
25	0.20	PP	non sterile	500	<b>9.055 535</b>
25	0.45	PP	non sterile	500	<b>6.255 331</b> 1

1



6.255 331

### LLG Syringe Filter PES, Polyethersulfone

**NEW!**

Hydrophobic membrane. Ideal for filtration of non-polar liquids and gases. It is very resistant to various solvents as well as acids and bases.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	Acrylic	non sterile	500	<b>9.055 524</b>
13	0.45	Acrylic	non sterile	500	<b>9.055 526</b>
25	0.20	Acrylic	non sterile	500	<b>9.055 525</b>
25	0.45	Acrylic	non sterile	500	<b>7.970 213</b> 2

2



7.970 213

### LLG Syringe Filter PVDF, Polyvinylidene fluoride

**NEW!**

Hydrophilic membrane for aqueous polar and light unpolar solutions. Very low protein binding. High flow rates ideal for use with biological macromolecules, water soluble oligomers and polymers.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	PP	non sterile	500	<b>7.970 258</b>
13	0.45	PP	non sterile	500	<b>9.055 534</b>
25	0.20	PP	non sterile	500	<b>7.970 387</b>
25	0.45	PP	non sterile	500	<b>7.970 286</b> 3

3



7.970 286

### LLG Syringe Filter GF, Glass-fibre

**NEW!**

Hydrophilic membrane suitable for pre-filtration. They can be used for solutions with high particulate loads or for highly viscous solutions (e.g. soil samples, fermentation broths) either alone or in combination with other filters.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.70	PP	non sterile	500	<b>9.055 550</b>
25	1.00	PP	non sterile	500	<b>9.055 551</b>
25	1.20	PP	non sterile	500	<b>9.055 552</b> 4
25	3.10	PP	non sterile	500	<b>9.055 553</b>

4



9.055 552



## Filtration/Syringe filters



### 1 2 Syringe filters Puradisc™ PVDF

**NEW!**

Hydrophilic membrane for aqueous polar and light unpolar solutions. Very low protein binding

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.20	PP	non-sterile	100	<b>9.951 222</b>
4	0.20	PP w. tip	non-sterile	50	<b>9.951 213</b>
4	0.45	PP	non-sterile	100	<b>9.951 224</b>
4	0.45	PP w. tip	non-sterile	50	<b>9.951 215</b>
13	0.20	PP	non-sterile	100	<b>9.951 227</b>
13	0.20	PP w. tip	non-sterile	50	<b>9.951 218</b>
13	0.45	PP	non-sterile	100	<b>9.951 229</b>
13	0.45	PP w. tip	non-sterile	50	<b>9.951 220</b>
4	0.20	PP	sterile	50	<b>9.951 221</b>
13	0.20	PP	sterile	50	<b>9.951 226</b>
13	0.20	PP w. tip	sterile	50	<b>9.951 217</b>
13	0.45	PP	sterile	50	<b>9.951 228</b>



### 3 Syringe filters Puradisc™ PTFE

**NEW!**

Hydrophobic membrane. Ideal for filtration of non-polar liquids and gases.

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.20	PP	non sterile	100	<b>9.951 252</b>
4	0.45	PP	non sterile	100	<b>9.951 253</b>
13	0.10	PP	non sterile	100	<b>9.951 255</b>
13	0.20	PP	non sterile	100	<b>9.951 256</b>
13	0.20	PP w. tip	non sterile	50	<b>9.951 249</b>
13	0.45	PP	non sterile	100	<b>9.951 257</b>
13	0.45	PP w. tip	non sterile	50	<b>9.951 250</b>
13	1.00	PP	non sterile	100	<b>9.951 258</b>
25	0.20	PP	non sterile	50	<b>9.951 069</b>
25	0.20	PP	non sterile	200	<b>9.951 070</b>
25	0.45	PP	non sterile	50	<b>9.951 071</b>
25	0.45	PP	non sterile	200	<b>9.951 072</b>
25	1.00	PP	non sterile	50	<b>9.951 073</b>



### 4 Syringe filters Puradisc™ Nylon

**NEW!**

Hydrophilic membrane; it is recommended for filtration of aqueous and organic/aqueous medium polar liquids.

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.20	PP	non sterile	100	<b>9.951 265</b>
4	0.45	PP	non sterile	100	<b>9.951 266</b>
13	0.20	PP	non sterile	100	<b>9.951 268</b>
13	0.45	PP	non sterile	100	<b>9.951 269</b>
25	0.20	PP	non sterile	50	<b>9.951 065</b>
25	0.20	PP	non sterile	200	<b>9.951 066</b>
25	0.45	PP	non sterile	50	<b>9.951 067</b>
25	0.45	PP	non sterile	200	<b>9.951 068</b>
4	0.20	PP	sterile	50	<b>9.951 264</b>
13	0.20	PP	sterile	50	<b>9.951 267</b>



### 5 Syringe filters Puradisc™ Polyethersulfone

**NEW!**

Hydrophilic membrane for aqueous and light organic solutions with a low binding capacity for proteins.

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	PP	non sterile	100	<b>9.951 239</b>
13	0.45	PP	non sterile	100	<b>9.951 241</b>
25	0.20	PP	non sterile	200	<b>9.951 063</b>
25	0.45	PP	non sterile	200	<b>9.951 064</b>
13	0.20	PP	sterile	50	<b>9.951 238</b>
13	0.45	PP	sterile	50	<b>9.951 240</b>
25	0.20	PP	sterile	50	<b>9.951 061</b>
25	0.45	PP	sterile	50	<b>9.951 062</b>



### 1 Syringe filters Puradisc™ Polypropylene

**(NEW)**

Suitable for HPLC sample filtration (water-based) and aggressive water solutions such as acids and alkalis.

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	PP	non sterile	100	9.951 245
13	0.45	PP	non sterile	100	9.951 246
25	0.20	PP	non sterile	50	9.951 074
25	0.20	PP	non sterile	200	9.951 075
25	0.45	PP	non sterile	50	9.951 076
25	0.45	PP	non sterile	200	9.951 077



### Syringe filters Puradisc™ Glass-fibre

**(NEW)**

Hydrophilic membrane suitable for pre-filtration.

GE Healthcare

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.70	PP-GF/A	non sterile	100	9.951 278
13	1.20	PP-GF/A	non sterile	100	9.951 276
13	1.60	PP-GF/A	non sterile	100	9.951 275
13	2.70	PP-GF/A	non sterile	100	9.951 277

### 2 Syringe filters Puradisc™ FP30

**(NEW)**

For aqueous solutions. Polycarbonate (PC) housing.  
Membrane cellulose nitrate (CN) or cellulose acetate (CA)

GE Healthcare

Membrane	Filter diam.	Pore size	Housing	Type	PK	Cat. No.
	mm	µm				
CA	30	0.20	PC	non sterile	50	9.049 934
CA	30	0.20	PC	non sterile	100	9.603 585
CA	30	0.20	PC	non sterile	500	9.603 584
CA	30	0.20	PC*	non sterile	500	9.049 919
CA	30	0.45	PC	non sterile	50	9.049 932
CA	30	0.45	PC	non sterile	100	9.049 927
CA	30	0.45	PC	non sterile	500	9.049 933
CA	30	0.80	PC	non sterile	50	9.049 936
CA	30	0.80	PC	non sterile	500	9.049 920
CA	30	1.20	PC	non sterile	50	9.049 937
CA	30	1.20	PC	non sterile	500	9.049 925
CA	30	5.00	PC	non sterile	50	9.049 931
CA	30	5.00	PC	non sterile	100	9.049 926
CA	30	5.00	PC	non sterile	500	9.603 581
CA	30	0.20	PC	sterile	50	9.049 913
CA	30	0.20	PC*	sterile	50	9.049 917
CA	30	0.45	PC	sterile	50	9.049 912
CA	30	0.80	PC	sterile	50	9.049 915
CA	30	1.20	PC	sterile	50	9.049 916
CA	30	5.00	PC	sterile	50	9.049 911
PTFE	30	0.20	PC	sterile	50	9.049 918

\* with Luer-Lock outlet



### 3 Syringe filters GD/X®

Whatman GD/X syringe filters are the perfect solution for samples with high viscosity or samples that contain particles. Four filter layers decrease clogging and therefore filter exchange during processing is avoided.

GE Healthcare

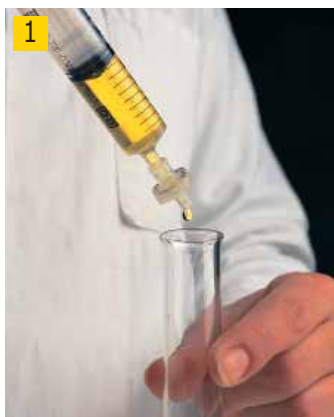
These filters allow 3 to 7 times higher throughput than traditional types.

Membrane	Filter diam.	Pore size	Housing	Type	PK	Cat. No.
	mm	µm				
Nylon	25	0.20	PP	non sterile	150	9.056 820
Nylon	25	0.45	PP	non sterile	150	9.056 821
PVDF	25	0.20	PP	non sterile	150	9.056 822
PVDF	25	0.45	PP	non sterile	150	9.056 823
RC	25	0.20	PP	non sterile	150	9.056 807
RC	25	0.45	PP	non sterile	150	9.056 809
RC	25	0.45	PP	non sterile	1500	9.056 810



➡ Disposable syringes - please see page 1358.

## Filtration/Syringe filters



## 1 Inorganic membrane syringe filters, Anotop®

GE Healthcare

The Anopore® inorganic membrane consists of high-purity aluminium oxide and can be used for a wide range of applications. This unique material has a precise, non-deformable, honeycomb structure with a relatively consistent pore size that guarantees very efficient particle retention. In addition, the membrane has a low protein binding capacity, minimal autofluorescence, is non-toxic and supports cellular growth.

- Anotop® 10 Plus/25 Plus contains a glass microfiber prefilter
- Housing: PP
- Extractable materials: low
- Inlet connection: Female luer lock
- Outlet connection: Male slip luer

Housing diameter: 10mm  
 Extractable substances: low  
 Retained volume: < 20µl

Membrane	Filter diam.	Pore size	Type	Residual volume	PK	Cat. No.
	mm	µm		ml		
0.02	1	0.02	non-sterile	0,02	50	9.951 186
0.1	10	0.10	non-sterile	0,02	50	9.951 187
0.2	10	0.20	non-sterile	0,02	50	9.951 188
0.02	10	0.02	non sterile with prefilter	0,03	50	9.951 192
0.1	10	0.10	non sterile with prefilter	0,03	50	9.951 193
0.2	10	0.20	non sterile with prefilter	0,03	50	9.951 194
0.02	25	0.02	non-sterile	0,15	50	9.951 198
0.1	25	0.10	non-sterile	0,15	50	9.951 199
0.2	25	0.20	non-sterile	0,15	50	9.951 200
0.2	25	0.20	non-sterile	0,15	200	9.951 201
0.02	25	0.02	non sterile with prefilter	0,20	50	9.951 205
0.1	25	0.10	non sterile with prefilter	0,20	50	9.951 206
0.2	25	0.20	non sterile with prefilter	0,20	50	9.951 207
0.2	25	0.20	non sterile with prefilter	0,20	200	9.951 208
0.02	10	0.02	sterile	0,02	50	9.951 189
0.1	10	0.10	sterile	0,02	50	9.951 190
0.2	10	0.20	sterile	0,02	50	9.951 191
0.02	10	0.02	sterile with prefilter	0,03	50	9.951 195
0.1	10	0.10	sterile with prefilter	0,03	50	9.951 196
0.2	10	0.20	sterile with prefilter	0,03	50	9.951 197
0.02	25	0.02	sterile	0,15	50	9.951 202
0.1	25	0.10	sterile	0,15	50	9.951 203
0.2	25	0.20	sterile	0,15	50	9.951 204
0.02	25	0.02	sterile with prefilter	0,20	50	9.951 209
0.1	25	0.10	sterile with prefilter	0,20	50	9.951 210
0.2	25	0.20	sterile with prefilter	0,20	50	9.951 211

2



## 2 Syringe filters Spartan®, Regenerated cellulose

GE Healthcare

Versatile use - ready-to-use filter units with a hydrophilic, low protein-binding membrane made of regenerated cellulose.

First class chemical resistance against the usual aqueous and organic HPLC solvents

- Spartan® 13 and 30 are tested and certified for UV absorbance substances at wavelengths of 210nm and 254nm with water, methanol and acetonitrile;
- Spartan® 13 has an extremely low hold up volume; <10µl, for optimal filtration

**Applications:**

Ideal for HPLC sample preparation to achieve reproducible results. Carefully controlled manufacture guarantees lowest traces of UV- absorbing, extractable components.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	LLF/LM	non sterile	100	9.049 948
13	0.20	LLF/LM	non sterile	500	9.049 980
13	0.20	LLF/Mini-Tip	non sterile	100	9.049 943
13	0.20	LLF/Mini-Tip	non sterile	500	9.049 951
13	0.45	LLF/LM	non sterile	100	9.049 949
13	0.45	LLF/Mini-Tip	non sterile	100	9.049 944
13	0.45	LLF/Mini-Tip	non sterile	500	9.049 950
30	0.20	LLF/LM	non sterile	100	9.049 941
30	0.20	LLF/LM	non sterile	500	9.049 965
30	0.45	LLF/LM	non sterile	50	9.049 960
30	0.45	LLF/LM	non sterile	100	9.049 942
30	0.45	LLF/LM	non sterile	500	9.049 959

LLF = luer-lock female  
 LM = luer male

### 1 Syringe filters, disposable, ReZist® PTFE

- Hydrophobic PTFE-membrane, laminated with polypropylene
- first class chemical resistance opposite to common organic HPLC solvents

GE Healthcare

**Application:**

Filtration of aggressive solutions.

GF92 membrane to the prefiltration of loaded solutions.

1



Membrane	Filter diam.	Pore size	Housing	Type	PK	Cat. No.
	mm	µm				
PTFE	13	0.20	PP*	non sterile	100	9.049 981
PTFE	13	0.45	PP*	non sterile	100	9.049 982
PTFE	30	0.20	PP	sterile	50	9.049 955
PTFE	30	0.20	PP	non sterile	100	9.049 961
PTFE	30	0.20	PP	non sterile	500	9.049 990
PTFE	30	0.45	PP	non sterile	100	9.049 962
PTFE	30	0.45	PP	non sterile	500	9.049 991
PTFE	30	1.00	PP	non sterile	100	9.049 963
PTFE	30	1.00	PP	non sterile	500	9.049 992
PTFE	30	5.00	PP	non sterile	100	9.049 964
PTFE	30	5.00	PP	non sterile	500	9.049 993
GF92	30		PP	non sterile	100	9.049 996
GF92	30		PP	non sterile	500	9.049 997

\*with Mini-Tip outlet

### 2 Syringe filter Minisart NML, Cellulose acetate (CA)

For sterile, particle free, ultrapure filtration of small volumes of liquid up to approx. 100ml. Colour coded pore sizes for ease of identification. With hydrophilic cellulose acetate membrane for minimum adsorption. Ready-to-use immediately. With female luer-lock inlet, male luer slip outlet.

Sartorius

**Application:**

Sterile filtration 0.2 µm pore size  
 High purification 0.45 µm pore size  
 Ultrafiltration 1.2 µm pore size  
 Pre-filtration 5 µm pore size

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
28	0.20	Acrylic-blue	sterile	50	9.049 101
28	0.20	Acrylic-blue	non-sterile	500	9.049 107
28	0.45	Acrylic-yellow	sterile	50	9.049 102
28	0.45	Acrylic-yellow	non-sterile	500	9.049 108
28	0.80	Acrylic-green	sterile	50	9.049 103
28	0.80	Acrylic-green	non-sterile	500	9.049 109
28	1.20	Acrylic-red	sterile	50	9.049 104
28	1.20	Acrylic-red	non-sterile	500	9.049 122
28	5.00	Acrylic-brown	sterile	50	9.049 105
28	5.00	Acrylic-brown	non-sterile	500	9.049 123

2



### 3 Syringe filters, Minisart® High-Flow Polyethersulfon (PES)

Minisart® High Flow syringe filters for sterile filtration, particle removal and ultra-cleaning. Covers a wide pH range. These independent ready-to-use syringe filters with PES membrane filter feature excellent flow speed and high filterable volume. The Minisart® High Flow is a syringe filter for rapid volume sterilisation with maximum user convenience. Ready-to-use units, which offer flow rates at low inlet pressures, allow for a correspondingly rapid sterile filtration.

Sartorius

3



Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
28	0.10	Acrylic-aubergine	sterile	50	9.049 866
28	0.20	Acrylic-blue	sterile	50	9.049 129
28	0.20	Acrylic-blue	non-sterile	500	9.049 130
28	0.45	Acrylic-yellow	sterile	50	9.049 865

## Filtration/Syringe filters

1



1

## Syringe filter Minisart-plus, Cellulose acetate/glass-fibre (CA/GF)



The only difference between the Sartorius Minisart-plus and the standard Minisart NML is an additional glass fibre pre-filter which enables a greater filtration volume for liquids which are difficult to filter. Available sterile, single-wrapped or non-sterile, bulk-wrapped, in outer packs as indicated.

Sartorius

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
28	0.20	Acrylic-blue	non sterile	500	9.049 126
28	0.45	Acrylic-yellow	non sterile	500	9.049 128
28	1.20	Acrylic-red	non sterile	500	7.017 224
28	0.20	Acrylic-blue	sterile	50	9.049 118
28	0.45	Acrylic-yellow	sterile	50	9.049 127

2



2

## Syringe filter Minisart glass-fibre (GF)

Sartorius Minisart-GF contains a single, binding agent-free, glass fibre pre-filter for ultrafiltration. Available sterile, single-wrapped or non-sterile, bulk-wrapped, in outer packs as indicated with a support achievement of 99% for 40µm spherical particles.

Sartorius

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
28	0.70	Acrylic-white	non sterile	50	9.049 119
28	0.70	Acrylic-white	non sterile	500	9.049 120

3



3

## Syringe filter Minisart Regenerated cellulose (RC)



Ready-to-use units with a hydrophilic, solvent-resistant membrane made of regenerated cellulose, making sample preparation quick and easy. Suitable for aqueous/organic solutions. With female luer-lock inlet, male luer slip outlet. Non-sterile.

Sartorius

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.20	PP	non sterile	50	9.049 081
4	0.20	PP	non sterile	500	9.049 082
4	0.45	PP	non sterile	50	9.049 084
4	0.45	PP	non sterile	500	9.049 085
15	0.20	PP	non sterile	50	9.049 087
15	0.20	PP	non sterile	500	9.049 088
15	0.45	PP	non sterile	50	9.049 091
15	0.45	PP	non sterile	500	9.049 092
25	0.20	PP	non sterile	50	9.049 094
25	0.20	PP	non sterile	500	9.049 095
25	0.45	PP	non sterile	50	9.049 097
25	0.45	PP	non sterile	500	9.049 098
15	0.20	PP	sterile	50	7.075 954
25	0.20	PP	sterile	50	7.076 270

4



4

## Syringe filter Minisart SRP, PTFE



With a chemical-resistant, hydrophobic PTFE membrane for high purification of solvents or aggressive liquids in HPLC or GC analysis. Low adsorption. With female luer-lock inlet, male luer slip outlet. Non-sterile.

Sartorius

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.45	PP	non sterile	50	9.049 146
4	0.45	PP	non sterile	500	9.049 147
15	0.20	PP	non sterile	50	9.604 022
15	0.20	PP	non sterile	500	7.017 207
15	0.45	PP	non sterile	50	9.604 024
15	0.45	PP	non sterile	500	9.049 073
25	0.20	PP	non sterile	50	9.049 115
25	0.45	PP	non sterile	50	9.049 116
25	0.45	PP	non sterile	500	9.049 117
15	0.20	PP	sterile	50	7.080 155
25	0.20	PP	sterile	50	7.076 124

Minisart SRP 15 and SRP 25 are also available in 0.2µm pore sizes (and sterile).

### Syringe filters CHROMAFIL®

MACHEREY-NAGEL

#### General

CHROMAFIL® syringe filters are used for filtration of suspended matter from liquid samples.

#### Advantages:

HPLC-Certification available on the internet

#### Polypropylene housing

Better solvent stability compared to acrylate and polystyrene filters

#### Shells ultrasonically sealed, not glued

No extractable components from glues

Filtration in both directions possible, the liquid cannot bypass the membranes

#### Luer lock on side of entry

Safe connection on the "high pressure" side

#### Luer exit

Standard luer for 3mm and 25mm filters, minispikes luer with low dead volume and small OD for 15mm filters

#### Deflector

The stream of liquid is broken and distributed, and does not directly hit the membrane: this prevents rupture of the membrane

#### Star-shaped distribution device

The liquid is evenly distributed to the whole membrane surface: this results in a better utilisation of the total area; the filter is not rapidly clogged up; high flow efficiency

#### Colour coded

Filters with 0.2µm pores have a yellow upper housing, for filters with 0.45µm pores this is colourless; the different membrane types are distinguished by different colours

#### Low dead volume

~80µl for 25mm, 12µl for 15mm, 5µl for 3mm.

#### Specifications

The membrane housing consists of polypropylene (PP). This material is very resistant towards most solvents and has a very low extractable substances content. Thus it can be used with almost all solvents, acids and bases (see table). The especially thick rim of the housing is ideal for use with laboratory robots

(e.g. Benchmate™). Filter inlet and filter outlet can be fitted to the CHROMABOND® columns for selective sample preparation with the aid of a special adaptor. All filters can be autoclaved at 121°C and 1.1bar for 30min.

#### Chromafil™Xtra:

Labelled for method validation and certification. Colour-free plain polypropylene housing. Imprint for direct identification of the membrane type, diameter and pore size.

### 1 Syringe filter CHROMAFIL™, Cellulose acetate (CA)

Hydrophilic membrane

MACHEREY-NAGEL

For filtration of water-soluble oligomers and polymers, especially suited for biological macromolecules. Very high shape stability in aqueous solutions extremely low binding capacity for proteins (21µg/ 25mm filter).

Available in a sterile package (S) for filtration under sterile conditions (each filter individually sealed).

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.20	PP-yellow/red	non sterile	100	9.049 038
25	0.20	PP-yellow/red	non sterile	400	9.049 039
25	0.20	PP-colourless/labelled*	non sterile	100	4.003 419
25	0.20	PP-colourless/labelled*	non sterile	400	4.003 420
25	0.45	PP-colourless/red	non sterile	100	9.049 040
25	0.45	PP-colourless/red	non sterile	400	9.049 041
25	0.45	PP-colourless/labelled*	non sterile	100	4.003 421
25	0.45	PP-colourless/labelled*	non sterile	400	4.003 422
25	0.20	PP-yellow/red	sterile	50	9.049 036
25	0.45	PP-colourless/red	sterile	50	9.049 037

\*Chromafil XTRA

1



### 2 Syringe filter CHROMAFIL™, Cellulose mixed ester (MV)

Hydrophilic membrane

MACHEREY-NAGEL

This membrane is recommended for all filtrations in aqueous or polar organic samples.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.20	PP-yellow/yellow	non sterile	100	9.049 030
25	0.20	PP-yellow/yellow	non sterile	400	9.049 031
25	0.20	PP-colourless/labelled*	non sterile	100	4.003 407
25	0.20	PP-colourless/labelled*	non sterile	400	4.003 408
25	0.45	PP-colourless/yellow	non sterile	100	9.049 032
25	0.45	PP-colourless/yellow	non sterile	400	9.049 033
25	0.45	PP-colourless/labelled*	non sterile	100	4.003 405
25	0.45	PP-colourless/labelled*	non sterile	400	4.003 406

\*Chromafil XTRA

2





## Filtration/Syringe filters

1



### 1 Syringe filter CHROMAFIL™, regenerated Cellulose (RC)

NEW!

Hydrophilic membrane with very low adsorption for aqueous and organic/aqueous liquids i.e. polar and medium polar sample solutions. Binding capacity for proteins 84µg/25mm filter.

MACHEREY-NAGEL

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
15	0.20	PP-yellow/blue <sup>1)</sup>	non sterile	100	9.049 025
15	0.20	PP-yellow/blue <sup>1)</sup>	non sterile	800	4.003 399
15	0.45	PP-colourless/blue <sup>1)</sup>	non sterile	100	9.049 026
15	0.45	PP-colourless/blue <sup>1)</sup>	non sterile	800	4.003 400
25	0.20	PP-yellow/blue	non sterile	100	9.049 042
25	0.20	PP-yellow/blue	non sterile	400	9.049 043
25	0.20	PP-colourless/labelled*	non sterile	100	4.003 424
25	0.20	PP-colourless/labelled*	non sterile	400	4.003 425
25	0.45	PP-colourless/blue	non sterile	100	9.049 044
25	0.45	PP-colourless/blue	non sterile	400	9.049 046
25	0.45	PP-colourless/labelled*	non sterile	100	4.003 426
25	0.45	PP-colourless/labelled*	non sterile	400	6.233 891

\*Chromafil XTRA

<sup>1)</sup> with mini tip outlet

2



### 2 Syringe filter CHROMAFIL™, Polyamide (PA)

Hydrophilic membrane. The membrane is recommended for filtration of aqueous and organic/aqueous medium polar liquids.

MACHEREY-NAGEL

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
3	0.20	PP-colourless	non sterile	100	9.049 047
3	0.45	PP-colourless	non sterile	100	9.049 048
25	0.20	PP-yellow/green	non sterile	100	9.049 049
25	0.20	PP-yellow/green	non sterile	400	9.049 050
25	0.20	PP-colourless/labelled*	non sterile	100	4.003 411
25	0.20	PP-colourless/labelled*	non sterile	400	4.003 412
25	0.45	PP-colourless/green	non sterile	100	9.049 051
25	0.45	PP-colourless/green	non sterile	400	9.049 052
25	0.45	PP-colourless/labelled*	non sterile	100	6.232 389
25	0.45	PP-colourless/labelled*	non sterile	400	6.234 011

\*Chromafil XTRA

3



### 3 Syringe filter CHROMAFIL™, Hydrophilized Polytetrafluoroethylene (H-PTFE)

NEW!

Hydrophilized polytetrafluoroethylene syringe filters labelled for method validation and certification

MACHEREY-NAGEL

- Hydrophobic membrane with additional hydrophilic characteristics
- For polar and nonpolar solutions
- Resistant against all kinds of solvents as well as acids and bases

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
13	0.20	PP-colourless/labelled	non sterile	100	6.266 191
13	0.45	PP-colourless/labelled	non sterile	100	6.266 192
25	0.20	PP-colourless/labelled	non sterile	100	6.266 189
25	0.45	PP-colourless/labelled	non sterile	100	7.658 851
25	0.20	PP-colourless/labelled	non sterile	400	7.660 305
25	0.45	PP-colourless/labelled	non sterile	400	6.266 190

We can supply this  
manufacturer's  
whole  
product range !



partner of the  
**LLG**  
Lab Logistics Group



### 1 Syringe filter CHROMAFIL™, Polytetrafluoroethylene (PTFE)

A hydrophobic membrane. Ideal for filtration of non-polar liquids and gases. It is very resistant to various solvents as well as acids and bases. By flushing with alcohol, followed by water, the original hydrophobic membrane can be made more hydrophilic.

MACHEREY-NAGEL

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
3	0.20	PP-colourless	non sterile	100	<b>9.049 053</b>
3	0.45	PP-colourless	non sterile	100	<b>9.049 054</b>
15	0.20	PP-yellow/colourless <sup>1)</sup>	non sterile	100	<b>9.049 055</b>
15	0.20	PP-yellow/colourless <sup>1)</sup>	non sterile	800	<b>4.003 394</b>
15	0.45	PP-colourless <sup>1)</sup>	non sterile	100	<b>9.049 056</b>
15	0.45	PP-colourless <sup>1)</sup>	non sterile	800	<b>4.003 395</b>
25	0.20	PP-yellow/colourless	non sterile	100	<b>9.049 057</b>
25	0.20	PP-yellow/colourless	non sterile	400	<b>9.049 058</b>
25	0.20	PP-colourless/labelled*	non sterile	100	<b>4.003 409</b>
25	0.20	PP-colourless/labelled*	non sterile	400	<b>4.003 410</b>
25	0.45	PP-colourless/labelled*	non sterile	100	<b>9.049 059</b>
25	0.45	PP-colourless/labelled*	non sterile	400	<b>9.049 060</b>

\*Chromafil XTRA

<sup>1)</sup> with mini tip outlet

1



### 2 Syringe filter CHROMAFIL™, Polyester (PET)

Hydrophilic multipurpose membrane.

MACHEREY-NAGEL

For polar as well as non-polar solvents. The HPLC filter, especially suited for mixtures of water and organic solvents; for TOC/DOC determination; not cytotoxic, does not inhibit the growth of microorganisms and higher cells. Polyester filter with integrated glass fibre prefilter (GF/PET): recommended for solutions with a high load of particulate matter or for highly viscous solutions.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
15	0.20	PP-yellow/orange <sup>1)</sup>	non sterile	100	<b>9.049 065</b>
15	0.20	PP-yellow/orange <sup>1)</sup>	non sterile	800	<b>4.003 397</b>
15	0.45	PP-colourless/orange <sup>1)</sup>	non sterile	100	<b>9.049 066</b>
15	0.45	PP-colourless/orange <sup>1)</sup>	non sterile	800	<b>4.003 398</b>
25	0.20	PP-yellow/orange	non sterile	100	<b>9.049 067</b>
25	0.20	PP-yellow/orange	non sterile	400	<b>9.049 068</b>
25	0.20	PP-colourless/labelled*	non sterile	100	<b>4.003 417</b>
25	0.20	PP-colourless/labelled*	non sterile	400	<b>4.003 418</b>
25	0.45	PP-colourless/orange	non sterile	100	<b>9.049 069</b>
25	0.45	PP-colourless/orange	non sterile	400	<b>9.049 070</b>
25	0.45	PP-colourless/labelled*	non sterile	100	<b>6.232 548</b>
25	0.45	PP-colourless/labelled*	non sterile	400	<b>4.003 416</b>
25	1.20	PP-colourless/black*	non sterile	100	<b>6.232 549</b>
25	1.20	PP-colourless/black*	non sterile	400	<b>6.233 172</b>
25	1.0/0.20	PP-black/orange <sup>2)</sup>	non sterile	100	<b>9.049 079</b>
25	1.0/0.45	PP-black/orange <sup>2)</sup>	non sterile	100	<b>9.049 080</b>
25	1.0/0.20	PP-blue/orange <sup>2)</sup>	non sterile	400	<b>9.049 020</b>
25	1.0/0.45	PP-black/orange <sup>2)</sup>	non sterile	400	<b>9.049 021</b>

\*Chromafil XTRA

<sup>1)</sup> with mini tip outlet<sup>2)</sup> with glass-fibre prefilter

2



### 3 Syringe filter CHROMAFIL™, Polyethersulfone (PES)

NEW!

Hydrophilic membrane for aqueous and light organic solutions with a low binding capacity for proteins. This membrane has extremely low extractable levels and is ideal for ionic chromatography and organic solutions.

MACHEREY-NAGEL

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.20	PP-colourless/labelled*	non sterile	100	<b>4.003 427</b>
25	0.45	PP-colourless/labelled*	non sterile	100	<b>4.003 429</b>
25	0.45	PP-colourless/labelled*	non sterile	400	<b>4.003 430</b>
25	5.00	PP-colourless/labelled*	non sterile	100	<b>4.003 431</b>

\*Chromafil XTRA

3



➔ Disposable syringes - please see page 1358.

## Filtration/Syringe filters



## 1 Syringe filter CHROMAFIL™, Glass-fibre (GF)

**(NEW)**

MACHEREY-NAGEL

Inert Filter, nominal pore size 1µm, allows higher flow rates than smaller pore filters; for solutions with high loads of particulate matter or for highly viscous solutions (e. g. soil samples, fermentation broths) as prefilters for other CHROMAFIL® filters, they prevent plugging of the membrane.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
15	1.00	PP-blue/colourless <sup>1)</sup>	non sterile	100	<b>9.049 077</b>
25	1.00	PP-yellow/black	non sterile	100	<b>9.049 078</b>
25	1.00	PP-yellow/black	non sterile	400	<b>6.229 751</b>
25	1.00	PP-colourless/labelled*	non sterile	100	<b>6.232 362</b>
25	1.00	PP-colourless/labelled*	non sterile	400	<b>4.003 423</b>

\*Chromafil XTRA

<sup>1)</sup> with mini tip outlet

## 2 Syringe filter CHROMAFIL™, Polyvinylidenefluoride (PVDF)

**(NEW)**

MACHEREY-NAGEL

Hydrophilic membrane, for polar and nonpolar solutions, water-soluble oligomers and polymers like proteins binding capacity for proteins 82µg/25mm filter. The PVDF filter with integrated glass fibre prefilter (GF/P) is recommended for filtration of biological samples with high particle loads. This filter features a high binding capacity for proteins. Also suited for filtration of polar and non-polar solutions.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.20	PP-colourless/labelled*	non sterile	100	<b>4.003 413</b>
25	0.20	PP-colourless/labelled*	non sterile	400	<b>4.003 414</b>
25	0.45	PP-colourless/labelled*	non sterile	100	<b>9.049 063</b>
25	0.45	PP-colourless/labelled*	non sterile	400	<b>4.003 415</b>
25	1.0/0.45	PP-black/white <sup>1)</sup>	non sterile	400	<b>4.003 402</b>
25	1.0/0.45	PP-black/white <sup>1)</sup>	non sterile	100	<b>4.003 401</b>

\*Chromafil XTRA

<sup>1)</sup> with glass-fibre prefilter

## 3 Syringe filter Polyamide (PA)

Thermo Scientific

This is a rather hydrophilic membrane; it is recommended for filtration of aqueous and organic/aqueous medium polar liquids.

Excellent chemical compatibility with esters, bases and alcohols.

Sterile filters individually blister-packed, colour-coded blue.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
4	0.20	PP	non sterile	100	<b>9.046 196</b>
25	0.45	PP	sterile	50	<b>6.268 144</b>



## 4 Syringe filters, Type 199, PTFE

Thermo Scientific

Autoclavable, colour-coded black.

Applications: Pre-filtration and ultrafiltration of organic solutions and alcohols, for volumes from 10 to 50ml, sterile filtration of air or other gases.

Filter diam.	Pore size	Housing	Type	PK	Cat. No.
mm	µm				
25	0.20	PP	non sterile	50	<b>9.046 187</b>

➔ More syringe filters, please see page 670.

#### 1 Syringeless filters, Autovial™

Provides a single disposable, manual pressure filtration system which is fast and easy to use in sample preparation.

GE Healthcare

- Built-in pre-filter for 'difficult' samples
- Minimal waste

Comprise a graduated, medical grade PP barrel, maximum capacity 12ml with 3cm<sup>2</sup> filter at the base, luer slip outlet and plunger. Non-sterile

Membrane	Pore size µm	PK	Cat. No.
PVDF	0.2	50	9.951 174
PVDF	0.45	50	9.951 175
Nylon	0.45	50	9.951 176
PTFE	0.2	50	9.951 177
PTFE	0.45	50	9.951 178



#### 2 3 Syringeless filters Mini-UniPrep™

The Whatman Mini-UniPrep™ filter provides a quick and easy means of removing particles from HPLC samples. In comparison to other methods the amount of time required for sample preparation is reduced to one third. Mini-Uni-Prep™ is a ready-to-use filter unit consisting of a 0.4ml chamber and a plunger. The plunger contains a filtration membrane at one end and a cap with septum at the other.

GE Healthcare

The plunger is pressed through the sample in the chamber. The pressure generated forces the filtrate into the plunger reservoir, with air escaping through the vent hole until the locking mechanism engages to form an airtight seal. The unit can now be placed in any autosampler and the sample analysed. Alternatively the sample can also be removed manually with a suitable syringe and injected into the HPLC instrument.

Membrane	Pore size µm	PK	Cat. No.
PTFE	0.2	100	9.056 824
RC	0.2	100	9.056 825
RC	0.45	100	9.056 826
PVDF	0.45	100	9.056 827
DpPP	0.45	100	9.056 828
GMF	0.45	100	9.056 829
Nylon	0.45	100	9.056 830
PTFE	0.45	100	9.056 831
PP	0.45	100	9.056 832
RC	0.2	1000	9.056 833
RC	0.45	1000	9.056 834
PVDF	0.45	1000	9.056 835
Nylon	0.45	1000	9.056 836
PTFE	0.45	1000	9.056 837
PP	0.45	1000	9.056 838



#### Syringeless filters, slit septa Mini-UniPrep™

Slit septum cap enables Mini-UniPrep use with current robotics on HPLC instruments for high throughput automation.

GE Healthcare

Durable yet flexible slit septum cap has been specially designed for instruments with sensitive sampling needs. Sample evaporation is minimal.

Membrane	Pore size µm	PK	Cat. No.
PVDF	0.2	100	9.056 840
Nylon	0.2	100	9.056 841
PTFE	0.2	100	9.056 842
Nylon	0.45	100	9.056 843
PTFE	0.45	100	9.056 844

#### Syringeless filters, amber Mini-UniPrep™

Amber colorant prevents photo degradation of light sensitive samples.

GE Healthcare

Same colorant used in pharmaceutical containers designed to meet USP specifications for light resistance. Translucent amber chamber and plunger enable easy visual inspection

Membrane	Pore size µm	PK	Cat. No.
Nylon	0.2	100	9.056 845
PVDF	0.45	100	9.056 846
PTFE	0.45	100	9.056 847



### 1 Compressor for Mini-UniPrep™ syringeless filters

The compressor can process up to 6 samples at any one time, further improving sample processing time.

GE Healthcare

Type	PK	Cat. No.
Compressor Mini-UniPrep™	1	9.056 839



### 2 Disposable filtration capsules, Polycap TF™

Hydrophobic PTFE membrane.

GE Healthcare

- 1µm capsules incorporate a PP prefilter
  - Autoclavable up to 132°C maximum
- For applications involving organic solvents and chemically aggressive solutions.

Type	Description	Porosity µm	PK	Cat. No.
Polycap 36 TF	non-sterile	0.2	1	9.951 126
Polycap 36 TF	non-sterile	1.0	1	9.951 127
Polycap 75 TF	non-sterile	0.2	1	9.951 128
Polycap 75 TF	non-sterile	1.0	1	9.951 129



### 3 Disposable filtration capsules, Polycap HD™



GE Healthcare

PP monofilament depth filters.

- Choice of filtration areas (36 HD: 260cm<sup>2</sup>, 75 HD: 650cm<sup>2</sup>) and porosities
- Maximum operating pressure 4.1 bar forward, 3.0 bar reverse
- Capsules may be used in either direction
- Low hold-up volume with air purge
- Autoclavable
- Operating temperature max. 60°C

Ideal for use as prefilters or for the filtration of samples in water or organic solvents. This design of deep-bed filter with a high loading capacity allows the purification of solutions with a high particle load.

- Filter PP

Type	Description	Porosity µm	PK	Cat. No.
Polycap 36 HD	Non-sterile	1	1	9.951 118
Polycap 36 HD	Non-sterile	5	1	9.951 119
Polycap 36 HD	Non-sterile	10	1	9.951 120
Polycap 36 HD	Non-sterile	20	1	9.951 121
Polycap 75 HD	Non-sterile	1	1	9.951 122
Polycap 75 HD	Non-sterile	5	1	9.951 123
Polycap 75 HD	Non-sterile	20	1	9.951 125



### 4 Disposable filtration capsules, Polycap AS™



GE Healthcare

Used for large volumes of aqueous samples. Presterilized. Contains a nylon membrane

which is inherently hydrophilic, has low extractables, is bio-safe and has excellent flow rates.

A glass microfibre prefilter ensures a long working life for the main filter and allows the easy filtration of large volumes and difficult samples.

Filter: GMF/Nylon

Type	Porosity µm	PK	Cat. No.
Polycap 36 AS	0.2	1	9.951 130
Polycap 36 AS	1.0	1	9.951 131

Selectron® filter holders FP 025/1 and FP 050/1

In polysulphone for use with syringes for analytical and preparative use.  
Filtration-media must be selected separately.

GE Healthcare

Applications of FP 025/1:

Clarification and sterile filtration of aqueous liquids and gases.

Applications of FP 050/1:

Sampling and flow rate applications. Ideal for filtrations using peristaltic pumps and for gas sterilisation.

Specifications:

Max. pressure: 7 bar  
Max. temperature: 180°C

Type	Diam. mm	PK	Cat. No.
FP 025/1	25	10	9.603 181 1
FP 050/1	50	1	9.603 205 2

3 Membrane filter holders, syringe, Type 165

Type 165. PC. Reusable filter holder, without filter. Filter has to be selected separately.

For particle removal, sterile filtration of aqueous solutions or for venting of sterile vessels. Autoclavable. With Luer connection.

Sartorius

Diam. mm	PK	Cat. No.
13	12	9.049 241
25	12	9.049 242



9.603 181



9.603 205





## Filtration/In-Line filter



## 1 LLG-Inline-filters

NEW!

The 50mm inline filter with its ultra pure Polypropylene housing (ultrasonic welded) is designed to contain 47mm membranes. The filter comes with 6-12mm hose connectors (tapered) at the inlet and the outlet side. The PTFE-membrane can be used for filtration of aggressive chemicals including acids and non-aqueous solutions. Due to its high filter area of 1735mm<sup>2</sup> the filter is suitable for long term gas filtration /venting applications, it could be used for filtration of higher volumes of liquid (up to approximately 500ml, depending on the particle load of the filtrated suspension) or for filtration of aggressive non aqueous liquids.

- hydrophobic PTFE-membrane
- Housing polypropylene
- autoclavable at 121°C for 20 minutes at 2 bar, max. 3 cycles
- stepped hose connector of 6-10mm on either sides
- high throughput with low pressure drop
- max. operating pressure 4.0 bar

Pore size µm	Diam. mm	PK	Cat. No.
0.20	50	5	9.059 513
0.45	50	5	9.059 514



## 2 Capsule filters LifeASSURE™ PFS Series, PTFE

NEW!

LifeASSURE™ PFS 50 capsule filters are ideal for sterile air filtration applications in the laboratory.

3M Deutschland

Typical applications are in air filtration and sterile venting of tanks used for cell culture and bioprocessing designed to remove microorganisms and particulates. The filters offer the ultimate microorganism retention for air and gas streams while providing superior air flow capacity. The containing membrane is designed to provide low pressure drop resulting in fast flow.

- High flow optimized design
- Air and gas flow in both directions
- Reliable sterilization in humid and dry areas
- Hydrophobic PTFE membrane
- Stepped horse-barb of 6-10 mm on either side
- User friendly easy to use
- Autoclavable at 126°C for 30 minutes at 1.7 bar, 10 cycles
- Polypropylene (PP) housing
- Max. operating pressure 2.8 bar

Pore size µm	Diam. mm	PK	Cat. No.
0.20	50	3	9.059 503
0.20	50	50	9.059 504



## 3 In-line filters, Midisart 2000

NEW!

Midisart 2000 in-line filters. For sterile ventilation of fermenters, culture vessels, etc. or to act as a water barrier between the suction flask and the vacuum pump in filtration applications. The supported PTFE membrane within a PP housing gives excellent chemical resistance. Filter in either direction (3 bar max. pressure).

Sartorius

- Stepped horse-barb of 6-12 mm on either sides
- sterile single packed filters, autoclavable

Pore size µm	Diam. mm	Type	PK	Cat. No.
0.20	62	sterile	12	9.049 151
0.20	62	sterile	25	9.049 152
0.20	62	non sterile	100	9.049 153
0.45	62	sterile	12	9.049 156
0.45	62	sterile	25	9.049 157



## 4 In-Line-Filter, disposable, Polydisc TF™

GE Healthcare

Mounted in a robust PP housing. All have a low hold-up volume.

Dimensions: (diameter x length) 53 x 46mm.

Connections: For 6mm to 10mm diameter bore tubing. Also accept male luer slip.

- Hydrophobic PTFE membrane
- Pore sizes 0.1µm, 0.2µm, 0.45µm, 1.0µm
- 1µm pore size unit has a PP prefilter
- Autoclavable at 131°C for 20 minutes
- Maximum operating pressure 4.0 bar

Suitable for chemically aggressive solutions, reagents and organic solvents. Ideal for protective venting, in-line filtration and isolation applications. Non-sterile.

Pore size µm	PK	Cat. No.
0.10	10	9.951 096
0.20	10	9.951 097
0.45	10	9.951 098
1.00	10	9.951 099

### 1 Pressure filtration units

Sartolab P 20. For sterile filtration of cell culture media. Ready-to-use, disposable filtration units. Surfactant-free, 0.2µm cellulose acetate membrane with minimal protein adsorption. With Luer lock inlet and filling bell on the outlet.

Sartorius

Sartolab P 20 plus. With additional, binding agent-free, glass-fibre pre-filter for media which are difficult to filter.

Type	PK	Cat. No.
Sartolab P 20	10	9.054 681
Sartolab P 20 plus	10	9.054 686
Coupling M12 x 1 with G <sup>3</sup> / <sub>8</sub> male thread	1	9.604 383
Diaphragm pump, pressurizing, G <sup>3</sup> / <sub>8</sub> male screwthread connection, for 220V, 50Hz supplies	1	9.604 389
Tripod for pressure filtration apparatus 9.604 345	1	9.604 394
Double-ended box spanner for tripod 9.604 394	1	9.604 395
Stainless steel forceps	1	9.604 061

Further designs available on request.



### 2 Pressure filter holder, stainless steel

For 47mm diameter membrane filters. With reservoir barrel allowing up to 200ml of liquid to be filtered by connection to a suitable direct pressure source. Can also be used for filtering larger volumes in conjunction with a 5L pressurising container. Complete with silicone O-rings and 10mm diameter tubing ferrules on the inlet and outlets. For sterile filtration of tissue cultures, ultrafiltration of buffer solutions, cell count solutions and for pressing soil samples.

Sartorius

Type	Volume ml	Filter size mm	PK	Cat. No.
Pressure filter holder	200	Ø 47 mm	1	9.604 345



### 3 Filter holders, vacuum, Type 162. Stainless steel

Specially designed for residue analysis. The stainless steel filter support produces homogeneous distribution of the residues on the membrane filter surface. Easy to use. For 47mm or 50mm diameter filters.

Sartorius

Type	PK	Cat. No.
Vacuum filter holder, 500ml	1	9.604 201
Vacuum filter holder, 100ml	1	9.604 202



### 4 Vacuum filtration Equipment Grade MV 050/0

Stainless steel construction, chemically resistant to most aqueous and organic solutions.

GE Healthcare

- funnel volume 500ml
  - for filters with 47mm /50mm diameter and 40mm diameter prefilter
- Self sealing, ideal for quick, repeated filtrations

Type	PK	Cat. No.
MV 050A/0*	1	9.603 520
MV 050/0	1	9.603 510

\*With rapid closure clamp



## Filtration/Filtration apparatus



### 1 2 Microbiological monitoring of water: MBS I system and membranes

The MBS I filtration system is designed for laboratories that handle high numbers of samples for microbiological quality control. It consists of a membrane dispenser, a funnel dispenser, and a 2-place filter AS220 manifold.

GE Healthcare

AS220 Filtration Manifold and Filtration funnels AS220 is a two-place stainless-steel filtration manifold, which can be joined together (maximum of 3 manifolds). This simple manifold can be used with 47mm or 50mm filtration membranes. AS220 Filtration Manifold and Filtration funnels deliver:- Waste reduction-because PP funnels can be autoclaved up to 20 times

- Time saving-No need to flame in between filtrations
- Easy handling
- Cost saving-20 PP funnels are enough for 1000 analyses
- Reduces cross-contamination

Description	PK	Cat. No.
2-place vacuum manifold AS 220	1	6.231 788
Automatic dispenser for funnels	1	6.231 860
Funnels 100 ml, PP, autoclavable	20	7.616 566
Funnels 100 ml, ABS, not autoclavable	20	9.603 290
Funnels 350 ml, PP, autoclavable	20	6.801 571
Autoclaving bags	20	7.608 012
Membran-Butler manual	1	6.225 967



### 3 Filter manifold systems, 3- and 6-place

Traditional multi-branch manifolds and individual filter holders for microbial enumeration. The filter holders and manifolds have been designed specifically for applications in which the particles or microorganisms retained on the membrane filter surface are of interest. Available with either 100ml or 500ml funnels.

Sartorius

#### Note:

Stainless steel manifolds only (Combisart) without funnels, for use with suitable adapters, are also available for attachment to all Sartorius vacuum funnels.

Type	Diam. mm	Capacity ml	PK	Cat. No.
3-way stainless steel manifold	50	3 x 100	1	9.604 222
6-way stainless steel manifold	50	6 x 100	1	9.604 223
3-way stainless steel manifold	50	3 x 500	1	9.604 226
6-way stainless steel manifold	50	6 x 500	1	9.604 224



### 4 Stainless steel filter manifold system

Combisart® Multibranch System with modular structure: For microbiological analysis. Basic system without outlet for holding all dismountable Sartorius vacuum funnels either completely or by using appropriate adapters

Sartorius

Description	PK	Cat. No.
3-place s/s manifold with sterile venting	1	9.604 227
6-place s/s manifold with sterile venting	1	9.604 228
Funnel, 100 ml	1	9.604 210
Funnel, 500 ml	1	9.604 211
Lid, stainless steel for 100ml funnel	1	9.604 212
Lid, stainless steel for 500ml funnel	1	9.604 213
Silicone lid seal for 100ml funnel	1	9.604 214
Silicone lid seal for 500ml funnel	1	9.604 215
Base support, stainless steel for mounting a single funnel onto a manifold	1	9.604 216



### 5 Filter holders, glass, Type 163

Two compact, glass vacuum filter holders for simple particle testing and clarification of solutions. With glass frit membrane filter support and anodised aluminium clamp.

Sartorius

Type	Volume ml	For Filter size	PK	Cat. No.
glass frit	30	25 mm dia.	1	9.604 204
glass frit	250	47/50 mm dia.	1	9.604 307

### 1 Filtering apparatus DURAN®

The DURAN® filtering apparatus is made of high-quality borosilicate glass.

DURAN Group

Aside from glass, the medium only comes into chemical contact with PTFE.

This means that the filtering apparatus can be used to filter virtually any chemical.

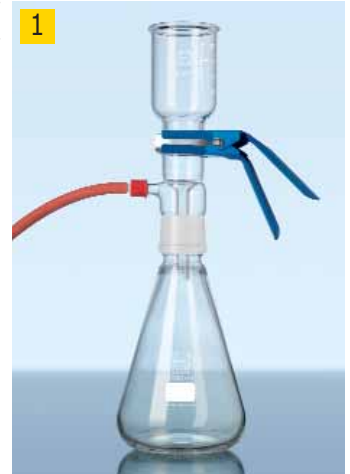
Thanks to the PTFE disc holder, fritted glass discs of different porosities can be used in addition to the slit-sieve disc.

This creates a wide application scope for filtration using filter paper, membrane filters (47mm) or simply using glass filters. Different porosities are available between 10µm and 160µm, which makes it possible to perform coarse and fine filtration in addition to analytical filtration. Furthermore, the filtering apparatus is suitable for the filtration of HPLC media, testing for bacterial contamination, residue analysis and the filtration of other media.

A Slit and a glass filter plate porosity 2 are included in the set.

Properties:

- Removable filter discs ensure easy cleaning
- Slit-sieve disc for mounting filter paper/membrane filter
- Only glass and PTFE come into contact with the medium
- Funnel with scale
- Secure plastic hose connection
- Tried-and-tested DURAN® filtering flask
- All components are available as spare parts



Description	PK	Cat. No.
Filtration apparatus DURAN®	1	9.052 744

### Filtration apparatus DURAN®, Spare parts

**NEW!**

DURAN Group

Description	PK	Cat. No.
PTFE adapter disc	1	9.052 745
Clamp (anodised aluminium)	1	9.052 746
Funnel with 250ml scale	1	9.052 747
Head NS 45 / 40	1	9.052 748
Filtration flask with NS 45 / 40, 1000ml	1	9.052 749
Plastic hose connection with silicone seal, straight, GL 14	1	7.023 754
Screw connection caps, red, made of PBT, GL 14, aperture bore 9.5mm	1	9.209 114
DURAN® glass filter disc, 50mm in diameter, por. 2	1	9.052 952
DURAN® slit-sieve disc, diameter 48mm	1	9.052 901
PTFE adapter, NS 45/40, GL 45	1	9.052 750

### 2 Filter holders, Type 16309

For vacuum filtration of particles from solutions. Comprises 250ml, dismantlable, top manifold with filter holder and clamp. For 47mm and 50mm diameter filters. Supplied complete with 1L capacity filter flask with ground joint to fit manifold and PP side-arm for safe connection of flexible vacuum tubing.

Sartorius

Type	Capacity ml	Filter size mm	PK	Cat. No.
All-glass unit	250	Ø 47 - 50mm	1	9.604 076



### 3 Vacuum filtration equipment, GV 025 series

- funnel volume 60ml
- for filter 25mm diameter

GE Healthcare

Type	Filter media	Connection	PK	Cat. No.
GV 025/0	glass frit	rubber stopper	1	9.603 250
GV 025/2	glass frit	TC*, EF* 250ml (NS 29)	1	9.603 252

\*TC = tubing connection

\*\*EF = Erlenmeyer flask



## Filtration/Filtration apparatus



### 1 Vacuum or pressure filtration apparatus, Typ 16510, PC

For vacuum or pressure filtration up to 2 bar.  
For ultra or sterile filtration.  
With collecting bottle 250 ml.  
For filter 47mm diameter filters.

Sartorius

Type	Volume ml	Filter size mm	PK	Cat. No.
PC filtration apparatus	250	Ø 47mm	1	9.049 243



### 2 Vacuum Filtration Equipment GV 050 Series

GE Healthcare

- Funnel Volume 250 ml
- to be used with Ø 47/50 mm membranes and Ø 40 mm pre-filter
- silicone cap and venting nozzle included in scope of supply
- GV 050A-Types equipped with rapid closure clamp

Type	Filter media	Connection	PK	Cat. No.
GV 050/0	glass frit	rubber stopper	1	9.603 500
GV 050/1	sieve	rubber stopper	1	9.603 501
GV 050/2	glass frit	TC*, EF** 1000 ml (NS 45)	1	9.603 502
GV 050/3	sieve	TC*, EF** 1000 ml (NS 45)	1	9.603 503

\*TC = tubing connection

\*\*EF = Erlenmeyer flask



### 3 Filter units, PES membrane



Jet Bio-Filtration

These bottle-top filter units are ideally suited for the separation or purification of samples which are contained in large volumes. The units are available with either 0.22µm or 0.45µm pore sizes and 3 different volumes (250, 500 and 1000ml).

Features:

- Bottle-top filter and reservoir bottle are included
- Light weight and stable wall construction
- Large knurls on the reservoir bottle cap for easy screwing
- Wide bottle mouth for efficient pouring out
- Volume graduation
- Hose connector fits multiple diameters
- Non-pyrogenic

Membrane material: Polyethersulfone (PES)

Capacity ml	Pore size µm	Neck thread mm	PK	Cat. No.
250	0.22	45	12	6.267 180
250	0.45	45	12	6.267 181
500	0.22	45	12	6.267 182
500	0.45	45	12	6.267 183
1000	0.22	45	12	6.267 184
1000	0.45	45	12	6.267 185



### 4 Filter units, Sartolab RF, PES membrane

Sartorius

Sterile filter units with receiver for sterile filtration of aqueous solutions and media, particularly cell culture. Simple and safe to handle. The integral polyethersulfone (PES) membrane guarantees extremely good throughput times and low protein binding, making it ideal for filtering proteinaceous solutions. The receiver is supplied with a flexible vacuum tubing adapter and a lid.

Type	Capacity ml	Pore size µm	PK	Cat. No.
Sartolab RF 150	150	0.22	12	9.049 200
Sartolab RF 250	250	0.22	12	9.049 201
Sartolab RF 500	500	0.22	12	9.049 202
Sartolab RF 1000	1000	0.22	12	9.049 203



#### 1 Bottle-top filters, Sartolab BT, PES membrane

Sterile vacuum filters for screwing directly onto sterile bottles. Disposable units for sterile filtration of media and aqueous solutions. The special polyethersulphone (PES) membrane produces extremely good throughput times and low protein binding, making it ideal for cell culture applications. With GL45 screw connection for all standard bottles. Caution: Only use sterile bottles authorised for use in low pressure applications.

Sartorius

Type	Capacity ml	Pore size µm	PK	Cat. No.
Sartolab BT 150	150	0.22	48	9.049 204
Sartolab BT 500	500	0.22	12	9.049 205
Sartolab BT 1000	1000	0.22	12	9.049 206

1



#### 2 Filter units Nalgene™ Rapid-Flow™, PES Membrane, sterile

Ideal for biological and pharmaceutical sterile filtration. PES membrane features low protein binding, low level of extractables and a high flow rate. Now available in three pore sizes: The best filter units with 0.20µm and 0.45µm pore size and new to the protection of valuable cell cultures from mycoplasma with 0.10µm pore size. Filter top and filtrate bottle are graduated. Blue color-coded collar with cellulosic vent plug side arm and quick-disconnect tubing adapter. Leakproof, sterile screw closure included for storage of sterile filtrate. Sterile, single packed. Certificate of Quality included in each full case. Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units, bottle tops and receivers for easy identification and lot traceability.

Thermo Scientific

Type	Volume upper/lower part ml	Thread GL	Pore size µm	Membrane diam. mm	PK	Cat. No.
565	150/150	45	0.10	50	1	9.046 022
568	250/250	45	0.10	50	1	9.046 024
566	500/500	45	0.10	75	1	9.046 023
565	150/150	45	0.20	50	1	6.302 336
568	250/250	45	0.20	50	1	6.228 218
566	500/500	45	0.20	75	1	6.227 381
569	500/500	45	0.20	90	1	6.225 298
567	1000/1000	45	0.20	90	1	6.229 041
165	150/150	45	0.45	50	1	7.047 785
168	250/250	45	0.45	50	1	7.047 791
166	500/500	45	0.45	75	1	7.047 787
169	500/500	45	0.45	90	1	7.047 793
167	1000/1000	45	0.45	90	1	7.047 789

2



#### 3 Bottle Top Filters Nalgene™ Rapid-Flow™, PES Membrane, sterile

Filters securely screw onto glass media bottles with 33mm or 45mm neck sizes.

Thermo Scientific

Allows direct filtration of liquid into sterile glass media bottles.

Tight and secure thread connection for vacuum filtration, vacuum tubing to be connected onto tubing adapter of side-arm. Graduated. Certificate of quality included in each full case. Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units for easy identification and lot traceability.

Type	Capacity ml	Neck thread GL	Pore size µm	Membrane diam. mm	PK	Cat. No.
596	150	33	0.20	50	1	7.048 392
596	150	45	0.20	50	1	6.224 312
595	500	33	0.20	75	1	7.048 388
595	500	45	0.20	75	1	7.048 390
597	1000	33	0.20	90	1	7.048 396
597	1000	45	0.20	90	1	7.048 397
296	150	33	0.45	50	1	7.048 393
296	150	45	0.45	50	1	7.048 395
295	500	33	0.45	75	1	7.048 389
295	500	45	0.45	75	1	7.048 391

3



## Filtration/Filtration apparatus



### 1 Filter Units Nalgene™, Low Profile, PES Membrane, sterile

Compact Nalgene™ filter units with PES membrane are ideally suited for quick filtration of samples between 50 to 100 ml.

Thermo Scientific

- Unitary construction with non-separable upper and receiver components
- Padless membrane support minimizes foaming of proteinaceous samples
- Non-pyrogenic
- Sterile

Type	Volume upper/lower part ml	Thread GL	Pore size µm	Membrane diam. mm	PK	Cat. No.
524	115/150	45	0.20	50	1	6.234 424
124	115/150	45	0.45	50	1	9.046 020



### 2 Filter Units Nalgene™ Rapid-Flow™ with 50ml centrifuge tube, PES Membrane, sterile

Polystyrene housing, 0.2µm PES membrane. The optimal choice for small volume tissue culture work. Offers clean, fast filtration of 20ml to 50ml of media or buffers. This low protein binding unit is non-cytotoxic and non-pyrogenic. Comes assembled with 50ml conical tube and a separate closure. Includes 2 reusable stands in each case. Certified and graduated. Lot number, catalogue number, membrane type, pore size and expiration date are printed on it.

Thermo Scientific

Type	Volume upper/lower part ml	Thread GL	Pore size µm	Membrane diam. mm	PK	Cat. No.
564	50/50	45*	0.20	50	1	9.046 021

\* with adapter for 50ml tube



### 3 Filter Units, Cellulose Nitrate Membrane, sterile



White, cellulose nitrate membrane. Colour code: green. Gamma-irradiated sterile. Highest throughput rate for water and aqueous solutions, low extractables content. Surfactant-free.

Thermo Scientific

Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units, bottle tops and receivers for easy identification and lot traceability.

Type	Volume upper/lower part ml	Thread GL	Pore size µm	Membrane diam. mm	Grid	PK	Cat. No.
121	115/115	45	0.45	50	black	1	7.047 590
125	150/150	45	0.20	50	without	1	9.046 109
125	150/150	45	0.45	50	black	1	9.046 110
125	150/150	45	0.80	50	without	1	9.046 111
126	250/250	45	0.20	50	without	1	9.046 121
126	250/250	45	0.45	50	black	1	9.046 122
126	250/250	45	0.80	50	without	1	9.046 123
450	500/500	45	0.20	75	without	1	9.046 131
450	500/500	45	0.45	75	black	1	9.046 132
450	500/500	45	0.80	75	without	1	9.046 133
127	500/1000	45	0.20	75	without	1	9.046 141
127	500/1000	45	0.45	75	black	1	9.046 142
127	500/1000	45	0.80	75	without	1	9.046 143

#### 1 Filter Units Nalgene™ Rapid-Flow™, Nylon Membrane, sterile

Single-use, disposable filter units for sterile filtration of media and other reagents, and for other highly sensitive cell culture lines. With polystyrene (PS) upper and lower chambers and nylon membrane. Colour code: red. For cell culture. Gamma-irradiated sterile. Extremely low in extractable substances, no wetting agents. Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units, bottle tops and receivers for easy identification and lot traceability.

Thermo Scientific

Type	Volume upper/lower part ml	Thread GL	Pore size $\mu\text{m}$	Membrane diam. mm	PK	Cat. No.
150	150/150	45	0.20	50	1	9.046 055
150	150/150	45	0.45	50	1	9.046 056
153	250/250	45	0.20	50	1	9.046 061
153	250/250	45	0.45	50	1	9.046 062
151	500/500	45	0.20	75	1	9.046 064
151	500/500	45	0.45	75	1	9.046 065
163	500/500	45	0.20	90	1	9.045 978
154	500/1000	45	0.20	75	1	9.046 067
154	500/1000	45	0.45	75	1	9.046 068
164	1000/1000	45	0.20	90	1	9.045 979



#### 2 Filter units Nalgene™ Rapid-Flow™, SFCA Membrane, sterile

NEW!

Single-use, disposable filter units for sterile filtration of media and other reagents, and for other highly sensitive cell culture lines. With polystyrene (PS) upper and lower chambers and surfactant-free, cellulose acetate membranes. Colour code: yellow collar. For cell culture. Gamma-irradiated sterile. Low protein binding, with high throughput rate for proteinaceous solutions and minimal extractables content. Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units bottle tops and receivers for easy identification and lot traceability.

Thermo Scientific

Type	Volume upper/lower part ml	Thread GL	Pore size $\mu\text{m}$	Membrane diam. mm	PK	Cat. No.
122	115/115	45	0.20	50	1	7.047 591
122	115/115	45	0.45	50	1	6.236 659
155	150/150	45	0.20	50	1	9.046 034
155	150/150	45	0.45	50	1	9.046 035
157	250/250	45	0.20	50	1	9.046 037
157	250/250	45	0.45	50	1	9.046 038
156	500/500	45	0.20	75	1	9.046 041
156	500/500	45	0.45	75	1	9.046 042
158	500/1000	45	0.20	75	1	9.046 044
158	500/1000	45	0.45	75	1	9.046 045
162	500/500	45	0.20	90	1	9.045 975
162	500/500	45	0.45	90	1	9.045 976
161	1000/1000	45	0.20	90	1	9.045 971
161	1000/1000	45	0.45	90	1	9.045 972



We can supply this  
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**LLG**  
Lab Logistics Group

## Filtration/Filtration apparatus

**1** Bottle Top Filters Nalgene™ Rapid-Flow™, SFCA Membrane, sterile

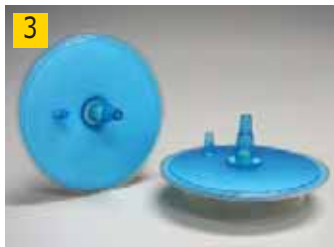
Tissue culture filters for screw fitting onto bottles with 33mm or 45mm neck diameters. *Thermo Scientific*  
 With surfactant-free, cellulose acetate membrane (SFCA) and polystyrene (PS) housing. Gamma-irradiated sterile. Pyrogen free. Non cytotoxic. Low-pressure filtration can be carried out directly into a suitable sterile bottle. Caution: Only use sterile bottles authorised for use in low pressure applications. Always wear protective equipment for low pressure procedures. The membrane is characterised by its low protein binding, good throughput rates and minimal clogging with negligible protein loss. Permanent, moulded graduations. Quick-disconnection tubing adaptor with cellulosic vent plug for tubing with an internal diameter of 6mm to 9mm. Lot number, catalogue number, membrane type, pore size and expiration date are printed on filter units for easy identification and lot traceability.

Type	Capacity ml	Neck thread GL	Pore size µm	Membrane diam. mm	PK	Cat. No.
290	150	33	0.20	50	1	9.045 951
290	150	33	0.45	50	1	9.045 952
290	150	45	0.20	50	1	9.045 953
290	150	45	0.45	50	1	9.045 954
291	500	33	0.20	75	1	9.045 956
291	500	33	0.45	75	1	9.045 957
291	500	45	0.20	75	1	9.045 958
291	500	45	0.45	75	1	9.045 959
292	1000	33	0.20	90	1	9.045 961
292	1000	45	0.20	90	1	9.045 963

**2** Filter Storage Bottles Nalgene™ Rapid-Flow™, PS, sterile

Easy-to-use ergonomic design. Can be used to store sterilised filtrate. Radiation-sterilised to save you time and minimize contamination. Also handy as presterilised, single-use storage containers. 1-1/2-turn threaded screw closure guarantees a leakproof seal and eliminates pH shift in receivers. Certified. Non pyrogenic, non cytotoxic. Sterile, graduated and leakproof. *Thermo Scientific*

Type	Capacity ml	Thread GL	PK	Cat. No.
455	150	45	1	7.048 731
455	250	45	1	7.048 732
455	500	45	1	7.048 733
455	1000	45	1	7.048 734

**3** Bottle Top Filters Nalgene™ Large-Volume FastCap™, PES Membrane, sterile

Large-Volume Bottle Top Filter, blue PS housing. FastCap™ Bottle Top Filter's universal fit eliminates the need to screw them onto glass media bottles. Filters up to 5L. just place on bottle mouth, apply vacuum and start filtering. Fits bottle necks up to 53mm. *Thermo Scientific*

Pore size µm	Diam. mm	PK	Cat. No.
0.20	90	1	7.055 107

## 6. Distillation, separation, filtration

### Filtration/Filtration apparatus

#### 1 LLG-Porcelain filter crucibles, with porous bottom, DIN 12909

Glazed.

Capacity ml	Ext. diam. mm	Height mm	Pore size µm	PK	Cat. No.
8	25	28	6	1	9.052 080
8	25	28	7	1	9.052 081
8	25	28	8	1	9.052 082
15	30	35	6	1	9.052 083
15	30	35	7	1	9.052 084
15	30	35	8	1	9.052 085
25	35	40	6	1	6.233 176
25	35	40	7	1	6.233 748
25	35	40	8	1	9.052 086
35	40	43	6	1	9.052 087
35	40	43	7	1	9.052 088
35	40	43	8	1	9.052 089
50	45	50	6	1	9.052 090
50	45	50	7	1	9.052 091
50	45	50	8	1	9.052 092



#### 2 Gooch crucibles, porcelain

**NEW!**

Made from porcelain with perforated bottoms. They need filter paper for filtering process.

Isolab

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
15	29	33	1	6.267 350
25	36	45	1	6.267 351
40	40	50	1	6.267 352



#### 3 Filter crucibles, borosilicate glass 3.3

Borosilicate glass 3.3. With sintered disc filter as outlined below.

Capacity ml	Porosity	Diam. mm	PK	Cat. No.
15	1	23	1	9.052 060
15	2	23	1	9.052 061
15	3	23	1	9.052 062
15	4	23	1	9.052 063
15	5	23	1	9.052 064
30	1	30	1	9.052 036
30	2	30	1	9.052 037
30	3	30	1	9.052 038
30	4	30	1	9.052 039
30	5	30	1	9.052 040
50	1	40	1	9.052 041
50	2	40	1	9.052 042
50	3	40	1	9.052 043
50	4	40	1	9.052 044
50	5	40	1	9.052 065



#### 4 Filter crucibles, DURAN®

With sintered glass filter disc at base, as outlined below.

DURAN Group

Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

Capacity ml	Porosity	Diam. mm	PK	Cat. No.
30	1	28	1	9.052 021
30	2	28	1	9.052 022
30	3	28	1	9.052 023
30	4	28	1	9.052 024
30	5	28	1	9.052 025
50	1	36	1	9.052 031
50	2	36	1	9.052 032
50	3	36	1	9.052 033
50	4	36	1	9.052 034



➡ Crucibles and lids - please see page 105.



## Filtration/Filtration apparatus



### 1 Rubber sleeves, EPDM

For filter crucibles. Temperature resistant up to 150°C. Autoclavable.

DURAN Group

Diam. mm	PK	Cat. No.
26	1	9.052 114
33	1	9.052 121
41	1	9.052 126
49	1	9.052 131



### 2 Adapters for filter crucibles, borosilicate glass 3.3.

Borosilicate glass 3.3. Autoclavable.

Diam. mm	Stem diam. mm	PK	Cat. No.
34	10	1	9.052 213
40	10	1	9.052 214
50	10	1	9.052 215



### 3 Adapters for filter crucibles, Duran®

Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DURAN Group

Diam. mm	Height mm	PK	Cat. No.
27	108	1	9.052 216
34	110	1	9.052 222
41	125	1	9.052 226
50	132	1	9.052 232



### 4 Filter holders, DURAN®

DURAN®. Dismountable, modular filter holders with screwthreaded top manifold, PP funnel outlet and two FKM seals. Accessory sintered filter discs (9.052 941 to 9.052 954) are screwed in between two FKM seals. The filter discs are easy to replace. Membrane or paper filters can be stretched across the disc. Filter plates must be ordered separately.

DURAN Group

Capacity ml	Plate diam. mm	Thread diam. mm	PK	Cat. No.
30	24	28	1	9.052 903
250	50	54	1	9.052 905
1000	90	95	1	9.052 910



### 5 Filter holders, glass, top manifold only, DURAN®

DURAN®. For use in dismountable filter holders. With screwthread, without PP outlet funnel, filter disc or FKM rubber seals.

DURAN Group

Capacity ml	Thread diam. mm	PK	Cat. No.
30	28	1	9.052 913
250	54	1	9.052 915
1000	95	1	9.052 920

### 1 Filter holders, outlet funnels, PP

PP. For use with dismountable filter holders. With screwthread to fit respective top manifold.  
Without manifold, sintered filter disc or FKM rubber seals.

DURAN Group

Neck thread	Thread diam. mm	PK	Cat. No.
GL			
28	10	1	9.052 973
54	12	1	9.052 975
95	18	1	9.052 980



### 2 Filter discs, DURAN®

**NEW!**

With glass rim. For use in dismountable filter holders. Patented design. Filter discs must always be screwed in between two FKM rubber seals. Without top manifold, PP outlet funnel or seals.

DURAN Group

Plate diam. mm	Porosity	PK	Cat. No.
24	1	1	9.052 941
24	2	1	9.052 942
24	3	1	9.052 943
24	4	1	9.052 944
50	1	1	9.052 951
50	2	1	9.052 952
50	3	1	9.052 953
50	4	1	9.052 954
90	1	1	9.052 961
90	2	1	9.052 962
90	3	1	9.052 963
90	4	1	9.052 964



### 3 FKM seals

**NEW!**

For use in dismountable filter holders. Without PP outlet funnel, filter disc or top manifold.

DURAN Group

For diam. mm	PK	Cat. No.
24	1	9.052 923
50	1	9.052 925
90	1	9.052 930



### 4 Slotted sieve disc (perforated plate) DURAN®

Can be used in the 250ml capacity dismountable filter holder as a carrier for membrane and paper filters.

DURAN Group

Plate diam. mm	PK	Cat. No.
48	1	9.052 901



## Filtration/Filtration apparatus



## 1 Filter funnels, Borosilicate glass 3.3

Borosilicate glass 3.3, with sintered disc filter as outlined below. Autoclavable.

Capacity ml	Porosity	Diam. mm	Stem diam. mm	PK	Cat. No.
50	1	36	10	1	9.052 367
50	2	36	10	1	9.052 368
50	3	36	10	1	9.052 369
50	4	36	10	1	9.052 370
75	1	48	10	1	9.052 371
75	2	48	10	1	9.052 372
75	3	48	10	1	9.052 373
75	4	48	10	1	9.052 374
125	1	60	10	1	9.052 375
125	2	60	10	1	9.052 376
125	3	60	10	1	9.052 377
125	4	60	10	1	9.052 378
250	1	80	18	1	9.052 066
250	2	80	18	1	9.052 067
250	3	80	18	1	9.052 068
250	4	80	18	1	9.052 069
500	1	95	22	1	9.052 379
500	2	95	22	1	9.052 380
500	3	95	22	1	9.052 381
500	4	95	22	1	9.052 382
1000	1	124	22	1	9.052 383
1000	2	124	22	1	9.052 384
1000	3	124	22	1	9.052 385
1000	4	124	22	1	9.052 386
4000	1	180	30	1	9.052 387
4000	2	180	30	1	9.052 388
4000	3	180	30	1	9.052 389
4000	4	180	30	1	9.052 390



## 2 Filter funnels, glass DURAN®

Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DURAN Group

Capacity ml	Porosity	Diam. mm	Stem diam. mm	Height mm	PK	Cat. No.
50	1	35	10	130	1	9.052 301
50	2	35	10	130	1	9.052 302
50	3	35	10	130	1	9.052 303
50	4	35	10	130	1	9.052 304
50	5	35	10	130	1	9.052 305
75	1	45	10	132	1	9.052 311
75	2	45	10	132	1	9.052 312
75	3	45	10	132	1	9.052 313
75	4	45	10	132	1	9.052 314
75	5	45	10	132	1	9.052 315
125	1	60	10	140	1	9.052 321
125	2	60	10	140	1	9.052 322
125	3	60	10	140	1	9.052 323
125	4	60	10	140	1	9.052 324
125	5	60	10	140	1	9.052 325
500	1	95	22	240	1	9.052 331
500	2	95	22	240	1	9.052 332
500	3	95	22	240	1	9.052 333
500	4	95	22	240	1	9.052 334
500	5	95	22	240	1	9.052 335
1000	1	120	22	270	1	9.052 341
1000	2	120	22	270	1	9.052 342
1000	3	120	22	270	1	9.052 343
1000	4	120	22	270	1	9.052 344
1000	5	120	22	270	1	9.052 345
4000	1	175	30	425	1	9.052 361
4000	2	175	30	425	1	9.052 362
4000	3	175	30	425	1	9.052 363
4000	4	175	30	425	1	9.052 364



## 3 Filter funnels, conical, borosilicate glass 3.3

Capacity ml	Porosity	Diam. mm	Int. diam. mm	Stem diam. mm	PK	Cat. No.
25	3	55	25	8	1	9.052 365
25	4	55	25	8	1	9.052 366

## 6. Distillation, separation, filtration

### Filtration/Filtration apparatus

#### 1 Filter funnels, glass DURAN®, conical

Conical. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DURAN Group

Capacity:	25mm
Diameter:	55mm
Plate diameter:	25mm
Stem diameter:	8mm
Height:	100mm

Type	Porosity	PK	Cat. No.
39D	3	1	9.052 453
39D	4	1	9.052 454



#### 2 Slotted sieve filter funnels (Buchner funnels), DURAN®

Buchner pattern funnel with slotted sieve (perforated) filter plate.  
Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DURAN Group

Capacity	Diam.	Height	Stem diam.	PK	Cat. No.
ml	mm	mm	mm		
70	48	132	10	1	9.252 022
125	60	140	10	1	9.252 028
220	73	190	18	1	9.252 034
500	95	240	22	1	9.252 044
1000	120	270	22	1	9.252 054



#### 3 LLG Buchner funnels, porcelain

For filter paper diam.	Capacity	PK	Cat. No.
mm	ml		
45	35	1	6.239 903
55	70	1	6.237 328
70	120	1	6.231 541
90	240	1	9.252 500
110	400	1	9.252 501
125	600	1	9.252 502
150	1000	1	9.252 503
185	2000	1	9.252 504
240	4000	1	9.252 505
295	7000	1	9.252 506
325	10000	1	9.252 507



#### 4 Buchner funnels, porcelain

To DIN 12905.

Haldenwanger

For filter diam.	Capacity	PK	Cat. No.
mm	ml		
29	10	1	9.252 027
48	50	1	9.252 045
59	75	1	9.252 055
74	135	1	9.252 070
95	290	1	9.252 090
114	580	1	9.252 110
130	795	1	9.252 125
155	1250	1	9.252 150
190	1900	1	9.252 185
250	4300	1	9.252 240
279	5800	1	9.252 270
330	10600	1	9.252 320



## Filtration/Filtration apparatus



### 1 Filter funnels, PP, Buchner

PP. Two-piece construction. Top and bottom sections can be separated. Easy to clean.

Kartell

For filterpaper diam.	Capacity	PK	Cat. No.
mm	ml		
42.5	40	1	9.252 330
55	70	1	9.252 331
70	180	1	9.252 332
80	285	1	9.252 333
90	390	1	9.252 334
110	810	1	9.252 335
160	2100	1	9.252 338
240	6000	1	9.252 339

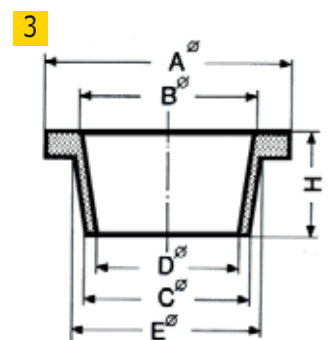


### 2 Discs for filter funnels, Buchner, PE-HD

Useful interface layer between filter paper and perforated Buchner plate. Avoids clogging of filter holes.

Kartell

Diam. mm	PK	Cat. No.
45	1	9.252 340
55	1	9.252 341
70	1	9.252 342
80	1	9.252 343
90	1	9.252 344
110	1	9.252 345
160	1	9.252 348
240	1	9.252 349



### 3 Filter rings, rubber

Natural rubber (NR). To hold filter funnels or crucibles.

Ø A	Ø B	Ø C	Ø D	Ø E	Height	PK	Cat. No.
mm	mm	mm	mm	mm	mm		
41	25	24	18	30	20	1	9.052 449
48	35	32	28	36	20	1	9.052 450
56	40	42	35	44	20	1	9.052 451



### 4 Protective collars, EPDM.

For filter flasks.

CETEC

Special design centres the funnel and flask and provides stable support for funnels, filters and manifolds placed on them. A clean seal is made between the flask rim and container placed on it. Application of the vacuum provides a tight seal. Also provides all-round protection for glass filter flask rims, significantly reducing impact damage and extending working life.

Diam. mm	Height mm	For bottles ml	PK	Cat. No.
23	11	100	1	9.052 391
33	15	250, 500	1	9.052 392
44	25	1000	1	9.052 393
58	25	2000, 3000	1	9.052 394
68	25	5000, 10000	1	9.052 395



### 5 Gaskets

Grey, filter gaskets made of natural rubber (NR). Conical, to fit filter funnels or crucibles into suction flasks.

Deutsch & Neumann

Top diam. mm	Bottom diam. mm	Height mm	Wall thickness mm	PK	Cat. No.
21	12.0	18	2.5	1	9.052 412
27	17.0	20	3.0	1	9.052 417
33	21.0	24	3.0	1	9.052 423
41	27.5	27	4.0	1	9.052 427
53	33.0	34	5.0	1	9.052 432
68	48.0	35	5.5	1	9.052 436
78	58.0	35	6.0	1	9.052 439
89	66.0	40	6.5	1	9.052 443



## 6. Distillation, separation, filtration

### Filtration/Filtration apparatus

#### 1 Set of filter crucible cones, Guko

Comprises of 8 Gukos with an external lower diameter of 12mm, 17mm, 21mm, 27.5mm, 33mm, 48mm, 58mm and 66mm each.

Deutsch & Neumann

Type	PK	Cat. No.
Guko set	1	9.052 400



#### 2 Filter flasks, PE

Manufactured from durable thick walled polyethylene. Side arms are suitable to fit 6-10 mm hose diameter.

Isolab

Capacity ml	PK	Cat. No.
1000	1	6.243 759



#### Filter flasks, Erlenmeyer shape, borosilicate glass 3.3

Borosilicate glass 3.3 with thick walls according to ISO 6556 and DIN 12476 standards.

Isolab

The glass side arm and the Polypropylene side arm is suitable to work with 6mm to 10mm hose diameters. The Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing.

Capacity ml	lateral connection	PK	Cat. No.
100	glass	1	4.008 437
250	glass	1	6.241 652
500	glass	1	6.241 291
1000	glass	1	6.239 008
2000	glass	1	4.008 438
100	PP	1	4.008 439
250	PP	1	6.237 706
500	PP	1	6.237 707
1000	PP	1	6.237 708
2000	PP	1	6.242 170



4.008 439

#### 4 Filter flasks, glass DURAN®

DIN 12476. ISO 6556. With PBT tubing connection and silicone (VMQ) seal. Heavy wall for vacuum use. These filtering flasks fulfil the regulations of the "equipment and product safety regulations".

DURAN Group

Capacity, 100ml to 2000ml: Erlenmeyer shape  
Capacity, 3000 to 20000 ml: Bottle shape

Capacity ml	Diam. mm	Neck diam. mm	Height mm	PK	Cat. No.
100	64	24	105	1	9.051 424
250	85	34	155	1	9.051 436
500	105	34	185	1	9.051 444
1000	135	45	230	1	9.051 454
2000	166	60	255	1	9.051 455
3000	170	58	295	1	9.051 456
5000	185	68	360	1	9.051 457
10000	240	70	420	1	9.051 458
15000	257	70	500	1	9.051 459
20000	290	70	535	1	9.051 460



#### 5 Assembly set, KECK® and Replacement seal

For attaching flexible vacuum tubing to filter flasks. Consists of straight PP tubing connection, PP tubulature made of silicone (VMQ) rubber seal. PP components can withstand temperatures up to 140°C for short periods without mechanical load.

DURAN Group

Type	PK	Cat. No.
Assembly set, Keck®	1	9.051 471
Replacement seal	1	9.051 474



## Filtration/Filtration apparatus



### 1 Filter flasks, glass DURAN®

DIN 12476. ISO 6556. Erlenmeyer shape. Heavy wall, for vacuum use.  
With ground 17.5/26 socket for vacuum tubing with 15mm to 18mm external diameter.  
These filtering flasks fulfil the regulations of the "equipment and product safety regulations".

DURAN Group

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
250	85	34	155	1	9.051 236
500	105	34	185	1	9.051 244
1000	135	45	230	1	9.051 254
2000	166	60	255	1	9.051 263



### 2 Filter flasks with side-arm socket, glass DURAN®

Bottle shape. Heavy wall, for vacuum use.  
With ground 17.5/26 socket for vacuum tubing with 15mm to 18mm external diameter.  
These filtering flasks fulfil the regulations of the "equipment and product safety regulations".

DURAN Group

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
3000	170	58	295	1	9.051 268
5000	185	68	360	1	9.051 273
10000	240	70	420	1	9.051 286
15000	255	70	500	1	9.051 288
20000	290	70	535	1	9.051 291



### 3 Filter flask DURAN®

Witt-pattern. Complete with interchangeable, flat-ground jointed, tube lid with cone, and plastic flexible tubing connection on one side. Vacuum resistant.

DURAN Group

DN	Height mm	Lid	PK	Cat. No.
100	160	29/32	1	9.051 519
150	200	29/32	1	9.051 531
100	160	45/40	1	9.051 619
150	200	45/40	1	9.051 631

We can supply this  
manufacturer's  
whole  
product range !

